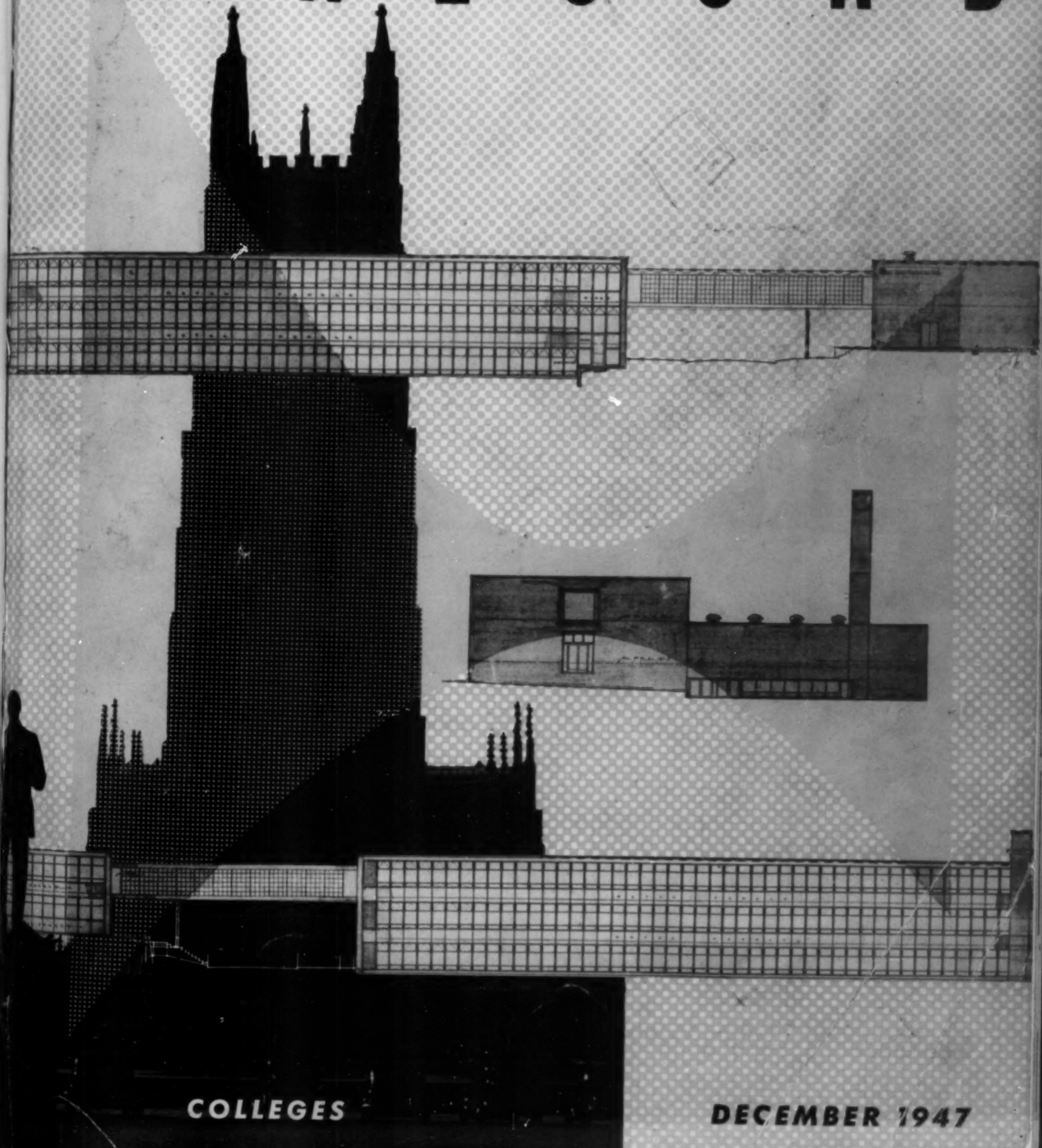
ARCHITECTURAL RECORD



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RECORD

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COVER: View of Duke University; Press Association, Inc., Photo. Elevations by Saarinen, Swanson and Saarinen, Architects, and Brooks-Borg, Associated

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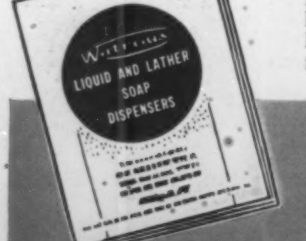

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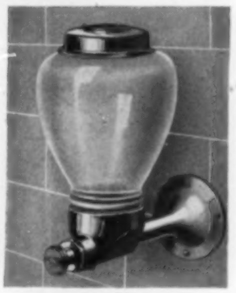
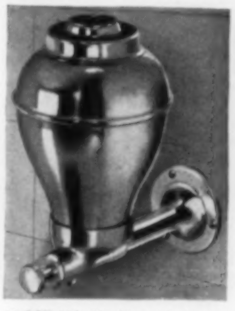
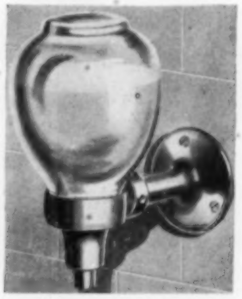


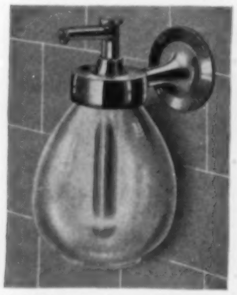
M-807 Horizontal type, glass container



M-807-MJ Horizontal type, metal container



M-815 Push-up type



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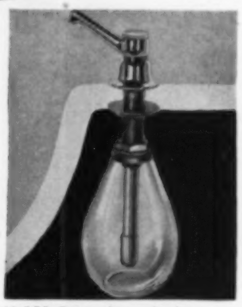
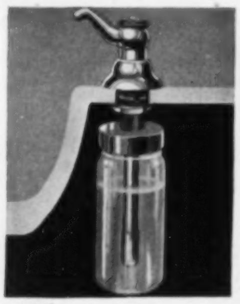


M-801 Pear shaped glass container



M-829 Narrow glass container

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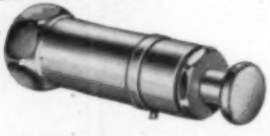
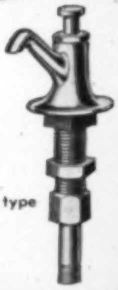


C-860 Horizontal type



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Watrous SOAP DISPENSERS

THE RECORD REPORTS

Steel Allocation Faces Revision • HHFA Policy Is Outlined • Accelerated Amortization Proposed as a Means of Stimulating Rental Housing Construction

The Administration is so engrossed, as it has been since summer, in the Marshall Plan that not much of the executive zeal, which continually invents new governmental tasks, is left over for housing. Nevertheless, the Marshall Plan itself contains little nooks that involve the construction business, and Congress is more or less under obligation either to "do something" or to issue the kind of report that, in the confusion of headlines and editorials, will look like action.

The Marshall Plan involves economic controls, among them the allocation of steel. Although steel, to be sure, already is allocated by the companies more or less along lines suggested by the government or Congressional committees, sanction of law would surely mean some change in the way of doing business. In allocating the product with an eye to shipping to Europe without hurting any domestic interest that might complain too loudly, Congress if not the Administration would prefer that the companies allocate. This was one of the things to be fought out.

Controls May Have Little Effect

It was not clear that control over the distribution of steel would greatly effect domestic use of supplies. A substantial part of the steel now sent abroad goes not to Europe for reconstruction but to Latin America for products that, insofar as either Administration or Congress is concerned, can wait. So it was apparent that much of the business of allocating would have to consist of redirecting exports — installing a complaint desk, no doubt, somewhere in the State Department for the benefit of those left out.

As the Council of Economic Advisers pointed out to President Truman before the Special Session started, public and private building projects are being shelved because steel is not available, and there is little prospect that the supply of steel can be increased in amounts even approximating increasing domestic and foreign needs. The problem is one of directing the steel supply to the most urgent uses both at home and abroad.

Other building products may not be so much involved in current proposals for curbs. The whole supply picture, though far from excellent, has improved; moreover it is steel, chiefly, among construction components, that must be sent abroad.

General assumption in Washington quarters is that home building will proceed at a heavier pace next year; estimates range from 850,000 to 900,000 starts.

HHFA Policy Outlined

As the new consolidated Housing and Home Finance Agency moves ahead, the views of Administrator Raymond M. Foley, top policy maker, become increasingly important. An official who has devoted 13 years to housing problems, he champions private enterprise housing.

Among his other views, voiced publicly on numerous occasions:

Chief government activity should be to aid private enterprise in reduction of housing cost and in attack upon its problem areas.

Until costs can be pared down to reach lower income groups, some form of public aid to housing is necessary. It should be shared by federal, state and local governments.

Means for such aid should be devised with progressively less public ownership and management.

Government credit should provide incentives for investing private funds in areas of housing finance presently avoided due to unusual risk or prospect of low or uncertain return.

Cost Reductions Proposed

Aside from general policy, Administrator Foley has these suggestions to overcome high costs:

Producers and suppliers of materials must re-examine their profit requirements and their system of merchandising.

Land developers must remove unnecessary margins.

Labor must justify its wage-rates with full productivity.

Subcontractors must sharpen their pencils in bidding.

Operative builders must be satisfied with reasonable profits derived from larger volume operations.

Restrictive practices of building codes, of labor, or of management must be removed where they add unnecessarily to housing costs.

New methods and materials, new techniques such as prefabrication and industrialization should have full support of industry, labor and government.

Congress Units Act

Chairman Ralph A. Gamble of the Congressional Joint Committee on Housing in October named Senator Flanders of Vermont to investigate high cost factors in housing and cost reduction. The Senator was scheduled to make his report this month.

Aim of the project is to find where the housing dollar goes, to study labor practices, analyze profits of contractors and distributors, and discover techniques which could make housing less expensive. It is a part of the Com-

(*Continued on page 10*)

— Drawn for the RECORD by Alan Dunn

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SERVEL *ALL-YEAR* GAS AIR
SEASON COMFORT, PROMOTES

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"We are entirely satisfied with the performance of our Servel," writes Gordon Brown, 4519 Firestone Blvd., South Gate, California. "The comfortable condition of our building is complimented by everyone and is the delight of our employees."

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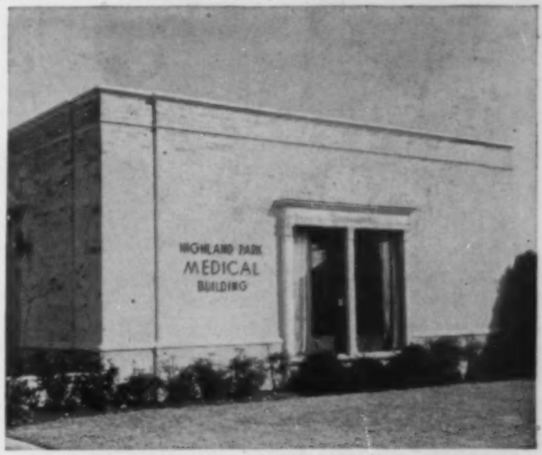
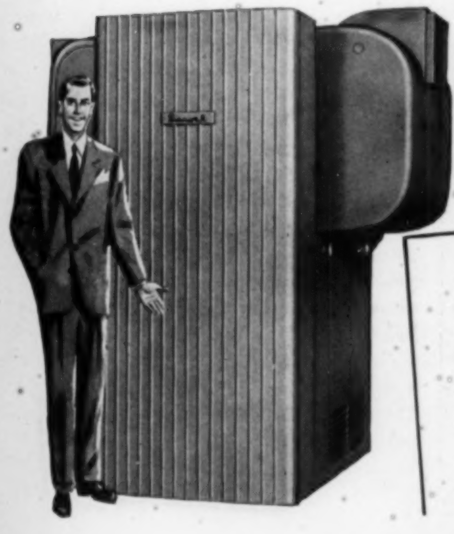
Whenever you are planning new construction that would benefit from the advantages of Servel *All-Year* Gas Air Conditioning, be sure to tell your clients about it. For additional testimony about specific applications, get in touch with your local Gas Company. Or write to Servel, Inc., 8712 Morton Avenue, Evansville 20, Indiana.

Connie's Prescription Shop, 1209 North Walker, Oklahoma City, Oklahoma, is kept comfortably cool in summer, warm in winter by the Servel *All-Year* Gas Air Conditioner. C. J. Masterson, proprietor, reports, "Our Servel Conditioner has been 100 per cent satisfactory."



Patients, doctors and nurses in the Highland Park Medical Building, 5450 Preston Road, Dallas, Texas, all enjoy Servel-supplied cool, clean, invigorating air in summer and clean, draft-free warmth in winter.



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mittee's overall investigation, which included field hearings in most parts of the nation.

During Committee field hearings, incidentally, private conferences were sometimes held with representatives of private capital and manufacturers. Washington hearings were scheduled for early this month.

In looking toward a single model building code, Vice Chairman McCarthy advises that a number of state governors intend to present measures to legislatures to pave the way for adopting such a code.

The House labor subcommittee investigating restrictive labor practices in the building industry, prior to its field hearings in November, heard charges from newsmen, who had conducted a survey, that "at least one dollar out of every five" put into home construction this year would be sheer waste as a result of restrictive practices of labor, business and government. The witnesses cited make-work union practices, low labor productivity, expensive marketing methods for building materials, and laws and regulations hampering building.

City Planning Grows

Metropolitan planning and expressway data have come recently from the Federal Works Agency and the Commissioner of Public Roads, who cite progress in the field. For instance, Milwaukee City and County are clearing their plans with each other and adjusting differences, and Los Angeles City and County have done so for many years. Louisville has an Area Development Commission under state law on which city, county and private groups are represented.

A number of states have regional planning powers which permit cities and counties to prepare metropolitan area plans, James W. Follin, FWA Assistant Administrator, points out. In recent years the number of cities getting together on such planning has increased greatly.

State laws for urban redevelopment, he explains, are of three types, one letting private corporations engage in redevelopment, one making public housing authorities the administrative as well as the construction agency, and one establishing a land agency in local government to administer redevelopment. California has the third type, which is growing in favor.

Thomas H. MacDonald, Public Roads Commissioner, discussing urban expressways, comments:

"Traffic generally tends to avoid congestion if it is at all possible to do so. Cities that ignore this obvious fact and refuse to modernize their arterial routes will pay a heavy price in loss of business and depreciation of property values in central business districts."

He says further: "Traffic studies and construction costs indicate that it will be far more economical to build expressways for large traffic volumes than to try to serve a growing traffic through street widening or other expedients."

Farm Houses to be Surveyed

A new farm house survey is to be undertaken by the U. S. Department of Agriculture under the 1946 Research and Marketing Act. The aim will be to assemble information on space requirements of farm houses to permit better planning. The survey will get down to brass tacks and analyze household activities of representative farm families.

In carrying out the project, the Department's Home Economic Bureau will work with state agricultural experiment stations. The work will be done by

(Continued on page 12)

Integrated Building: a combination display at New York's Mortimer Levitt Gallery. On the wall, rendering of El Panama Hotel (Edward D. Stone Associates, Architects) and plan of the hotel courtyard (Thomas D. Church, landscape architect). Background, 6-ft. mosaic panel by Max Spivak, to be placed near hotel dance pavilion. Foreground, model of sculpture by Jose de Rivera, to be executed in steel for hotel's swimming pool

INTEGRATED BUILDING

An unusual and interesting exhibition at the Mortimer Levitt Gallery, New York, last month was designed to promote integration of the arts in building, and was the first of a proposed series of similar exhibits at the same gallery.

Called "Integrate Modern Building," the show was a display of architecture, design, mosaic, painting and sculpture. Ten projects were shown, each prepared especially for the gallery as a collaborative effort. Architects contributing were: Edward D. Stone Associates; George Nemeny and A. W. Geller; Reisner and Urbahn, and James M. Allen, Associate; Jessen, Jessen, Millhouse and Greeving; Carl Koch; Daniel Laitin and Samuel Glaberson; and Schweikher and Elting.

Working with the architects were sculptors Jose de Rivera, Robert Cronbach and Charles Umlauf; mosaicist Max Spivak; landscape architect Thomas D. Church; muralists Frederick Wight, Virginia Berresford, Jerome Snyder, and Rudolph Weisenborn; model maker Devon Dennett; and interior designers George Wells and Jac Lessman.

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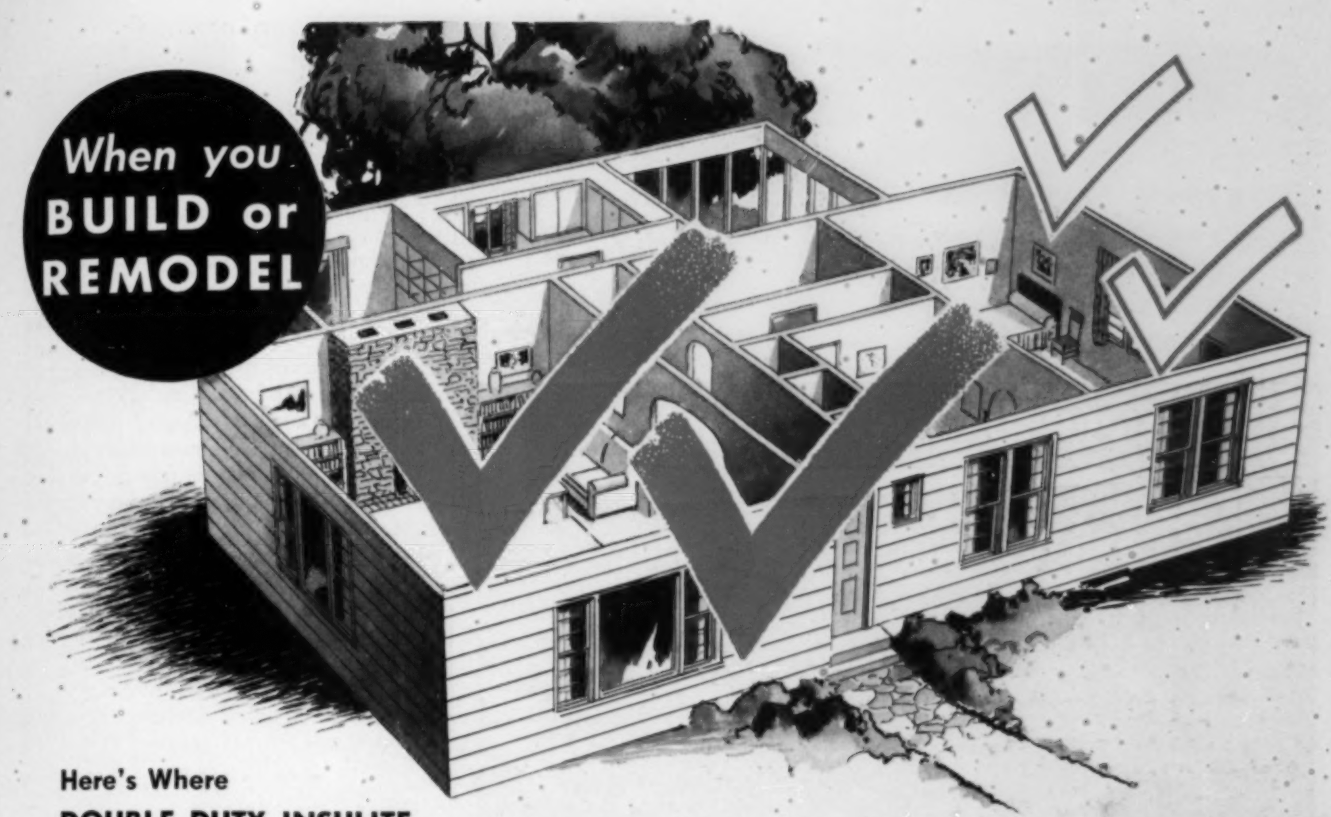

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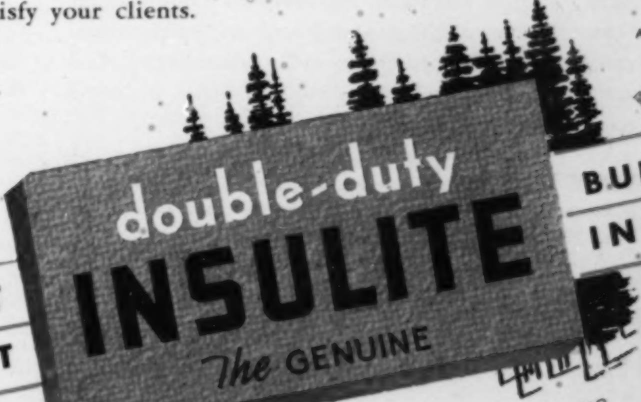
Architectural Section 10 a/9



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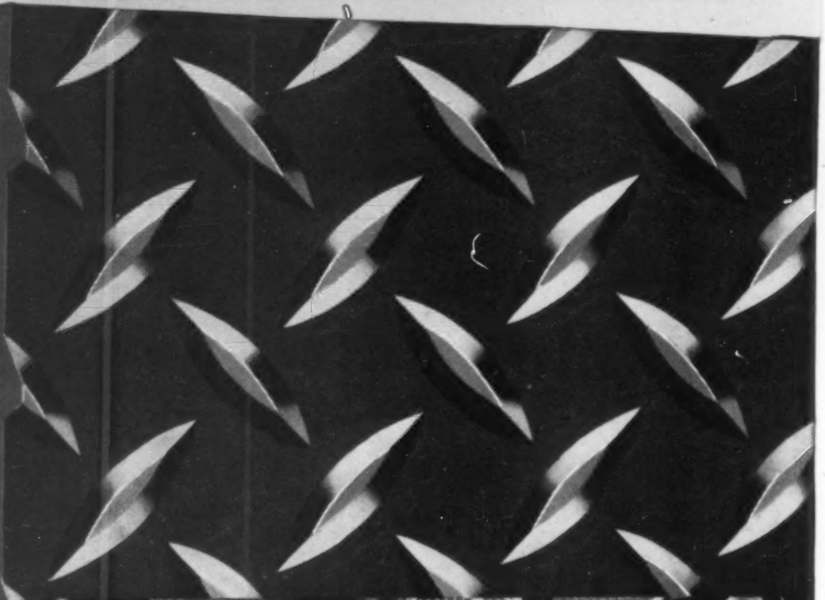

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THE RECORD REPORTS

(Continued from page 10)

regions — northeastern, northern, north central and western — and will include among its space arrangement considerations those household activities affected by climate, topography, type of farming, family preference, etc. Closet space and general storage problems will be included.

"Some farmhouses tend to be arranged inefficiently and have too little space for comfort and convenience," comments E. A. Meyer, Administrator of the Research Act. "This is due to (1) lack of plans to meet family living requirements in various regions of the country, and (2) lack of established standards for space to meet these requirements. Filling these omissions is essential if more efficient, livable and economic farmhouse plans suited to regional requirements are to be developed by architects, families planning their own houses, and others interested in housing design."

Other Developments

Other Washington developments in construction include:

1. The new Housing and Home Finance Agency has completed its organization and will have five divisions directly under Administrator Raymond M. Foley — Divisions of General Program, Lanham Act Functions, General Administration, Law, and Information. It should be noted that the General Program Division will include three advisers, one on relations with industry and consumer groups, one on racial and minority relations and one on international inquiries.

2. The Federal Works Agency contemplates a larger road program in 1948 with the total running about a third larger than in 1947. As to federal building construction, plans are for no extensive 1948 program but rather a concentration on a few badly needed projects. However, building designs will be worked out and additional funds sought for site purchases and blueprinting of projects for later years.

3. The National Home and Property Owners Foundation plans a series of meetings in Washington and other cities in January to consider legislative proposals. On its program: federal tax deduction on home payments, as well as interest payments; state tax exemption on first $5000 of value of home; ceiling on real and property tax in every state; elimination of federal government from housing business.

4. The recent Washington, D. C., Home Builders Exposition drew tens of thousands of persons to see its "more

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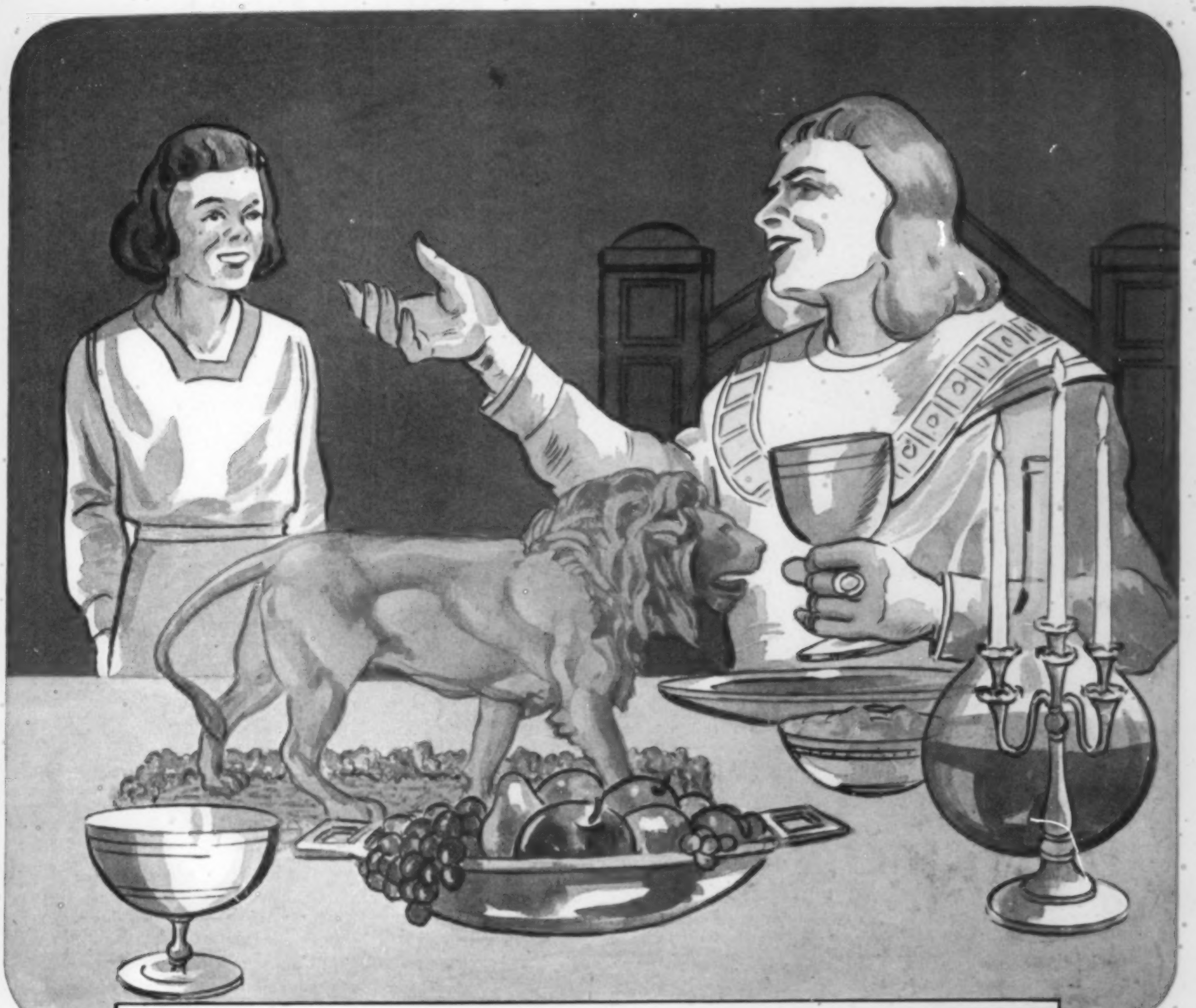

A STORY FOR ARCHITECTS AND DECORATORS from McGuffy's ancient "First Reader"

It seems the bus boy persuaded the chef to let him sculp a lion out of butter for a centerpiece. When the prince saw the masterpiece he said "Junior, you are too good to waste your skill on ephemeral butter, and you shall carve lions in stone to flank my drawbridge and I shall pay you well."

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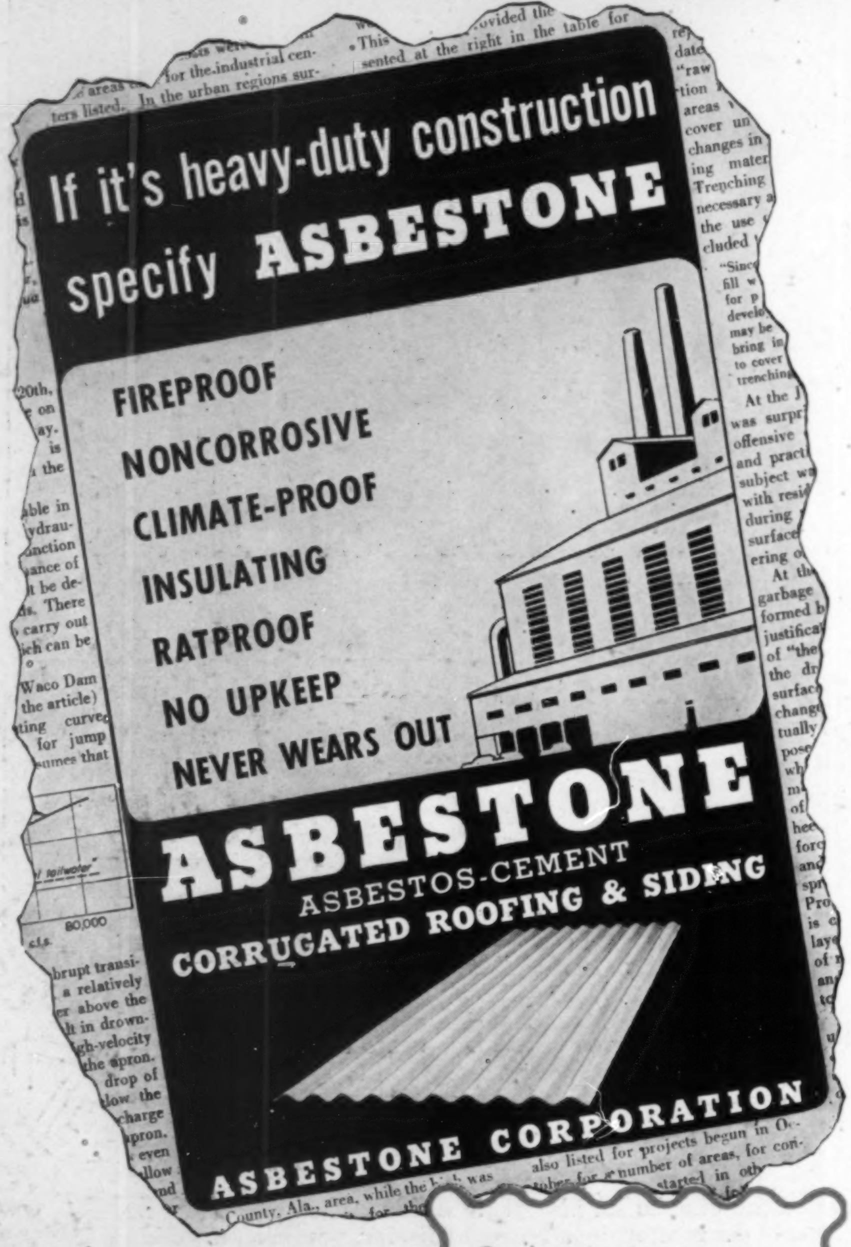

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THE RECORD REPORTS

(*Continued from page 12*)

than an acre of exhibits" of new home building products, equipment, furnishings and appliances. Among other awards was a model home.

5. Housing Expediter Frank R. Creedon, who resigned to take charge of an atomic energy construction program, was succeeded by Tighe E. Woods as Acting Expediter. Mr. Woods had been Mr. Creedon's deputy for rent control.

6. The Supreme Court upon opening its term in October upheld a lower court decision which, in turn, upheld a Los Angeles county tax impost on imported Lumber.

◆ ◆ ◆

ON THE CALENDAR

Dec. 1–27: Group Show of Painting, Sculpture and Pottery, Bertha Schaefer Gallery, 32 E. 57th St., New York City.

Jan. 3: Symposium on School and Educational Buildings, sponsored by the Pennsylvania Society of Architects of the A.I.A., University of Pennsylvania, Houston Hall, 3417 Spruce St., Philadelphia, Pa.

Jan. 10–29: "Arts of Early People," exhibition from the anthropology collection of the University, School of Architecture and Allied Arts, University of Oregon, Eugene, Ore.

Jan. 12–16: 2nd National Materials Handling Exposition, Public Auditorium, Cleveland, Ohio.

Jan. 26–29: 5th All-Industry Refrigeration and Air Conditioning Exposition, Public Auditorium, Cleveland, Ohio.

Feb. 2–6: Air Conditioning Exposition (8th International Heating and Ventilating Exposition), Grand Central Palace, New York City.

Feb. 7–26: "French Prints from Corot to Picasso," exhibition of drawing, etching and lithography, School of Architecture and Allied Arts, University of Oregon, Eugene, Ore.

PLAN OFFERED TO SPEED RENTAL HOUSING

Following a series of conferences with investors and builders across the country, the National Committee on Housing has proposed accelerated amortization as a means of stimulating the building of rental housing. In six cities alone, reports the Committee, the plan would produce at least 35,500 apartments in two years.

As explained by the Committee, the plan "calls for liberalization of amortization regulations by Congress to enable

(*Continued on page 16*)

6 reasons

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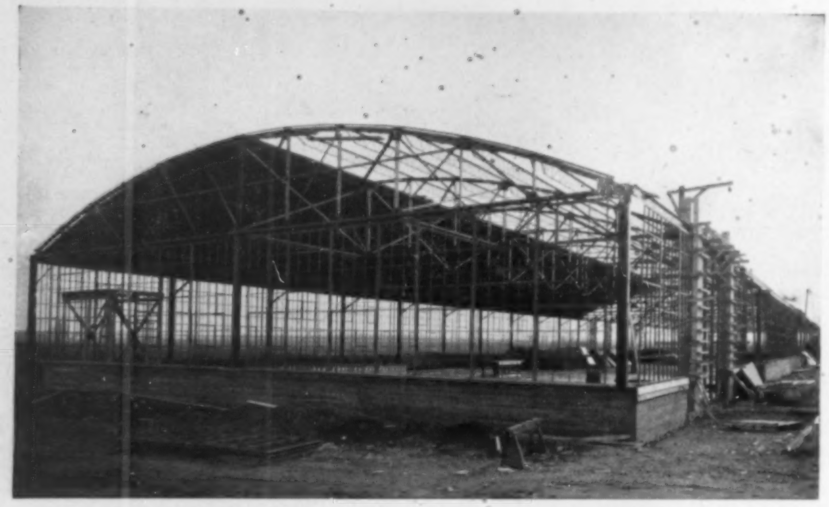

Superior Coach Co., Lima, Ohio, 75' x 300', H. C. Tuttle, Contractor

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(*Continued from page 14*)

investors to undertake such projects in the face of today's high construction costs." This it would accomplish by amortizing the indebtedness against the property concurrently with the depreciation in book value. It would permit investors, on approval of the Federal Housing Agency, to charge off annually for five years up to 10 per cent of the project cost as emergency amortization in addition to the normal depreciation rate of 2½ per cent.

What this would mean, briefly, is that for five years the investor most likely would have to pay no corporate tax whatever on the development because against a 12½ per cent depreciation annually the project almost surely would show not a profit but an apparent loss. Thus the investor would actually save a 38 per cent corporate income tax (the present rate) on 10 per cent of the cost of the project each year for five years — a sizable sum which theoretically would be applied to the reduction of the mortgage. The plan presupposes that the investor have an income from a source other than the rental project, and that he use such income, without tax liability, toward the amortization of the project investment.

Such a plan, obviously, would appeal only to large corporations, and would not be feasible for insurance companies, which do not pay a corporate income tax. Furthermore, it would be profitable only in the case of large projects and only if the high corporate income tax remains in effect for several years after the projects have been built.

Accelerated amortization is not a new idea, but this is the first time it has been put forward as a definite recommendation. Whether or not it would be acceptable to a very tax-conscious government is a moot question. Even if it were, there remains the question of its acceptability to the average large-scale investor, who under its terms would have to be willing to subject himself to FHA supervision (a certificate of necessity issued by the FHA is required by the plan) in return for a tax saving which may be achieved anyway by the reduction of federal taxes in the near future.

BUILDING NOTES

Wax Research Tower

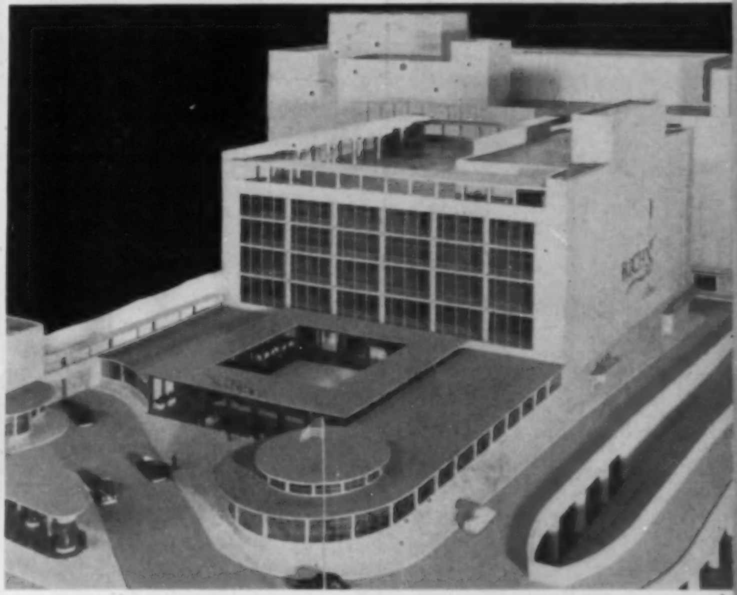
Ground has been broken by S. C. Johnson, Inc., for the 15-story Wax Research Tower at Racine, Wisc., which will be the principal feature of the new laboratory designed for the company by Frank Lloyd Wright.

(*Continued on page 128*)

Sears-Roebuck and W. T. Grant Co., Stores, La Crosse, Wisconsin. Pozzolith Architectural Concrete. Building Owner—Dr. Frank Hoeschler. Archt.—Boyum, Schubert & Sorenson, La Crosse, Wis. Contr.—Theo. J. Molzahn & Sons, Inc., La Crosse, Wis.

Foley's Bros. Store, Houston, Texas. 50,000 cubic yards of Pozzolith Ready-Mixed Concrete. Archt.—Kenneth Franzheim, Houston, Texas. Contr.—Frank Messer & Sons, Cincinnati, Ohio. Ready Mixed Producer—Parker Bros. & Co., Inc., Houston, Texas.

Joseph Magnin Co., Inc., Sacramento, Calif. Pozzolith Architectural Concrete. Archt.—Harry J. Devine, Sacramento, Calif. Structural Engineer—Ernest D. Francis, Sacramento, Calif. Gen. Contr.—Swinerton & Walberg Co., San Francisco, Calif.



Rich's Department Store, Atlanta, Ga. 25,000 cubic yards of Pozzolith Ready-Mixed Concrete. Archt.—Toombs & Creighton, Atlanta, Ga.; Engr.—W. B. Lamb, owner's representative; Gen. Contr.—Capital Construction Co., Atlanta, Ga. Ready Mixed Producer—Whitley Construction Co., Decatur, Ga.

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CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926—1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corporation, from data compiled by E. H. Boeckh & Associates, Inc.

	NEW YORK					ATLANTA				
	Residential		*Apts., Hotels, Office Bldgs.*	*Commercial and Factory Buildings*		*Residential*		*Apts., Hotels, Office Bldgs.*	*Commercial and Factory Buildings*	
Period	*Brick*	*Frame*	*Brick and Concr.*	*Brick and Concr.*	*Brick and Steel*	*Brick*	*Frame*	*Brick and Concr.*	*Brick and Concr.*	*Brick and Steel*
1920	136.1	136.9	123.3	123.6	122.6	122.8	122.9	108.6	109.8	105.7
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1941	134.5	135.1	135.1	137.2	134.5	97.5	96.1	99.9	101.4	100.8
1942	139.1	140.7	137.9	139.3	137.1	102.8	102.5	104.4	104.9	105.1
1943	142.5	144.5	140.2	141.7	139.0	109.2	109.8	108.5	108.1	108.7
1944	153.1	154.3	149.6	152.6	149.6	123.2	124.5	117.3	117.2	118.2
1945	160.5	161.7	156.3	158.0	155.4	132.1	133.9	123.2	122.8	123.3
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
June 1947	219.3	221.8	205.9	207.0	203.6	180.4	184.1	155.4	154.3	154.4
July 1947	223.4	225.0	211.2	212.5	206.6	184.0	187.9	160.3	159.6	158.8
Aug. 1947	225.5	227.1	215.5	214.9	209.4	185.4	189.3	162.4	161.2	161.4
Sept. 1947	225.9	227.5	216.4	216.0	210.4	185.6	189.5	164.1	162.3	165.0
	% increase over 1939					*% increase over 1939*				
Sept. 1947	**83.0**	**85.9**	**65.6**	**61.8**	**61.6**	**115.0**	**128.2**	**72.5**	**66.7**	**74.1**

	ST. LOUIS					SAN FRANCISCO				
1920	118.1	121.1	112.1	110.7	113.1	108.8	107.5	115.2	115.1	122.1
1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1941	118.8	118.0	121.2	121.7	122.2	116.3	112.9	120.5	123.4	124.3
1942	124.5	123.3	126.9	128.6	126.9	123.6	120.1	127.5	129.3	130.8
1943	128.2	126.4	131.2	133.3	130.3	131.3	127.7	133.2	136.6	136.3
1944	138.4	138.4	135.7	136.7	136.6	139.4	137.1	139.4	142.0	142.4
1945	152.8	152.3	146.2	148.5	145.6	146.2	144.3	144.5	146.8	147.9
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
June 1947	202.2	202.2	182.8	185.4	182.1	189.0	187.4	178.4	180.8	181.1
July 1947	205.6	207.2	187.8	187.8	187.5	195.1	194.0	186.6	190.6	188.0
Aug. 1947	207.0	208.6	189.9	189.4	190.1	196.7	195.6	188.9	192.4	190.8
Sept. 1947	207.5	209.0	191.2	190.8	192.3	198.4	196.3	192.5	197.4	195.7
	% increase over 1939					*% increase over 1939*				
Sept. 1947	**88.2**	**95.3**	**61.1**	**59.3**	**61.6**	**87.8**	**97.7**	**63.9**	**62.0**	**68.0**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).
Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

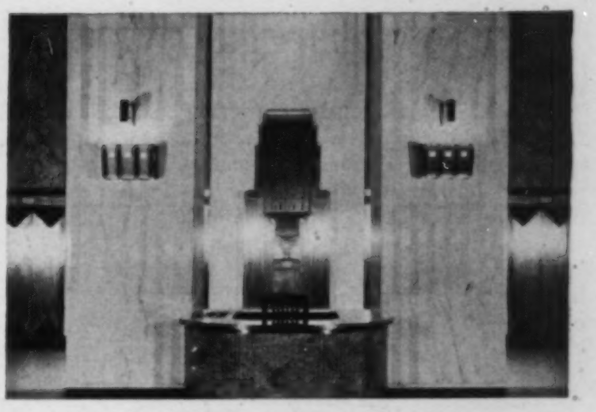
$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

Chicago's Field Building keeps its youth with the help of ANACONDA NICKEL SILVER



Ingenious treatment of tower elevator lobby combines mail box with elevator dispatch board in the form of the building itself... all in gleaming Anaconda Nickel Silver.

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REQUIRED READING

DESIGNED FOR THE SUN

Your Solar House. Edited by Marion J. Simon. New York 20, N.Y. (1230 Sixth Ave.), Simon and Schuster, Inc., 1947. 10 by 13 in. 128 pp. illus. $3.00.

The 49 house plans here presented are as different as 49 architects from as many sections of the country could make them, but all have one feature in common: the maximum utilization of the sun for light and heat. All are, in short, "solar houses."

This is not, however, a collection of plans chosen at random because they happened to illustrate a given theme. The book had its inception when The Libbey-Owens-Ford Glass Co., as part of a program to introduce its double-paned, self-insulating window, Thermopane, commissioned an architect in each state and in the District of Columbia to "design a solar house to fit the needs, background, and environment of his own locality." The architects were chosen by a panel of professors of architecture, editors and others familiar with the architectural profession throughout the country.

With Talbot Hamlin of the Columbia University School of Architecture serving as architectural consultant, and with the technical assistance of Libbey-Owens-Ford, the resulting plans and renderings were compiled into this volume. For background, three chapters of text were added to give the story of the book itself, some facts about glass making, the history and characteristics of Thermopane, and a brief technical discussion of the solar house (with diagrams to show correct placement of the house and the working principles of the roof overhang). Three pages of questions and answers about the solar house and a table giving percentages of sunshine hours in cities in various parts of the country complete the text material.

The houses themselves stand squarely on their own feet. Each is accompanied by a few paragraphs of description by the architect, stressing the particular needs or characteristics of the locality for which it was designed, and explaining the main features of the plan.

NOT JUST HOUSING

Approach to Better Housing. By Arnold Waring, A.R.I.B.A. London, W. 1, Eng. (17 Stratford Pl.) Leonard Hill Ltd., 1947. 5½ by 8½ in. 102 pp. illus. 18s.

Since well before the end of the war, England has been planning not just to replace the thousands of dwellings that were "blitzed" but to replace them with houses of better quality. Her architects and town planners were engrossed in the problem, in fact, while the bombs were still falling around them. By the time building could be resumed they knew what they wanted, and they were well aware of the mistakes they must avoid. Some of their conclusions found their way into print.

Mr. Waring's discussion is a later, hence more leisurely, exploration of the problem. His conclusions follow in general those of his fellows, but they have been strengthened by a longer period of gestation.

Starting with a resumé of housing from the primitive hut to the 20th Century "litter of suburbs," Mr. Waring studies the field from every angle. He looks at town planning, garden cities and "estate developments," at zoning and at slums, finding in each some suggestion for improvement. The kernel of his book, however, lies in the final two chapters, which deal with house design and construction. Here he goes into great detail, taking the house room by room, and illustrating liberally with plans.

Mr. Waring's chief contribution in this volume is not concrete suggestion but, as his title indicates, a thought-provoking *approach* to the problem of what can be done to improve the quality of housing all up and down the line.

STRUCTURAL DESIGN

Architectural Construction: The Choice of Structural Design. By Theodore Crane. New York 16, N. Y. (440 Fourth Ave.), John Wiley & Sons, Inc., 1947. 6¼ by 9½ in. x + 414 pp. illus. $6.00.

Theodore Crane, Professor of Architectural Engineering at Yale, has given us in this volume a welcome and workman-like text which will appeal as much to the practicing architect as to the student. For not only does it cover its subject with the thoroughness and clarity required of a textbook, it also sums up the available types of construction and offers recommendations as to their applications.

As Prof. Crane explains in his preface, this book "deals with the problem of making an appropriate choice for the structural portions of a building, as governed by the geographical location, site conditions, type of occupancy, equipment and architectural design. It presents a procedure for determining the type of building frame, foundation, floor, roof and wall construction most suitable to meet the requirements of any particular structure."

Starting with a chapter on building codes and design standards, the text covers all the basic considerations in structural design from foundation to roof. Photographs, diagrams and tables are used liberally, and the entire book is arranged for maximum clarity. This should be an important and useful addition to the architect's library.

SCULPTURE

American Sculptors Series: Vol. I, Wheeler Williams; Vol. II, Paul Manship; Vol. III, Anna Hyatt Huntington; Vol. IV, Daniel Chester French. New York (101 Fifth Ave.), W. W. Norton & Co., Inc., 1947. 5 by 6½ in. 64 pp. each. illus. $1.50 each, $6.00 the set.

Published under the auspices of the National Sculpture Society, these four small volumes present photographs of sculpture by four well-known Americans, with brief biographical notes on each. No attempt has been made to assess the value of the artists — all four are too well known to need such assessment; the photos are allowed to speak for themselves, with captions held to simple identification and location.

SKETCHBOOK

Around Waynesboro with Pen and Ink: Historical Sketches by Terry Mitchell. Waynesboro, Pa., The Record Herald Publishing Co., 1947. 8⅝ by 11⅜ in. 32 pp. illus.

Waynesboro, Pa., was laid out as a town in 1797 by John Wallace, Jr., the son of its founder. It dates back as a settlement, however, to around 1750, and some of the original buildings are still standing. It is these especially which lend interest to Terry Mitchell's sketchbook.

The 30 fine pen and ink drawings are accompanied by historical notes by the artist — notes which tell of the town's oldest families as well as of its oldest structures. The two together form a booklet of charm, and an interesting addition to Americana.

NEW EDITIONS

MODERN ARCHITECTURE

An Introduction to Modern Architecture. By J. M. Richards. Revised and edited, with new material by Elizabeth B. Mock. New York 16, N. Y. (245 Fifth Ave.), Penguin Books, Inc., 1947. 4¼ by 7⅛ in. 128 pp. illus. 35 cents.

To bring it up to date, Mr. Richards' seven-year-old discussion of modern architecture has been thoroughly revised, with much new material added. In particular, Mrs. Mock has contributed a new selection of photographs and plans, a few of which are of buildings erected since the original edition appeared.

Mrs. Mock has made an ideal collaborator for Mr. Richards: trained in architecture by Frank Lloyd Wright, she was director of the Museum of Modern Art's Department of Architecture for three years, and is well versed in the best of modern architecture.

(Continued on page 30)

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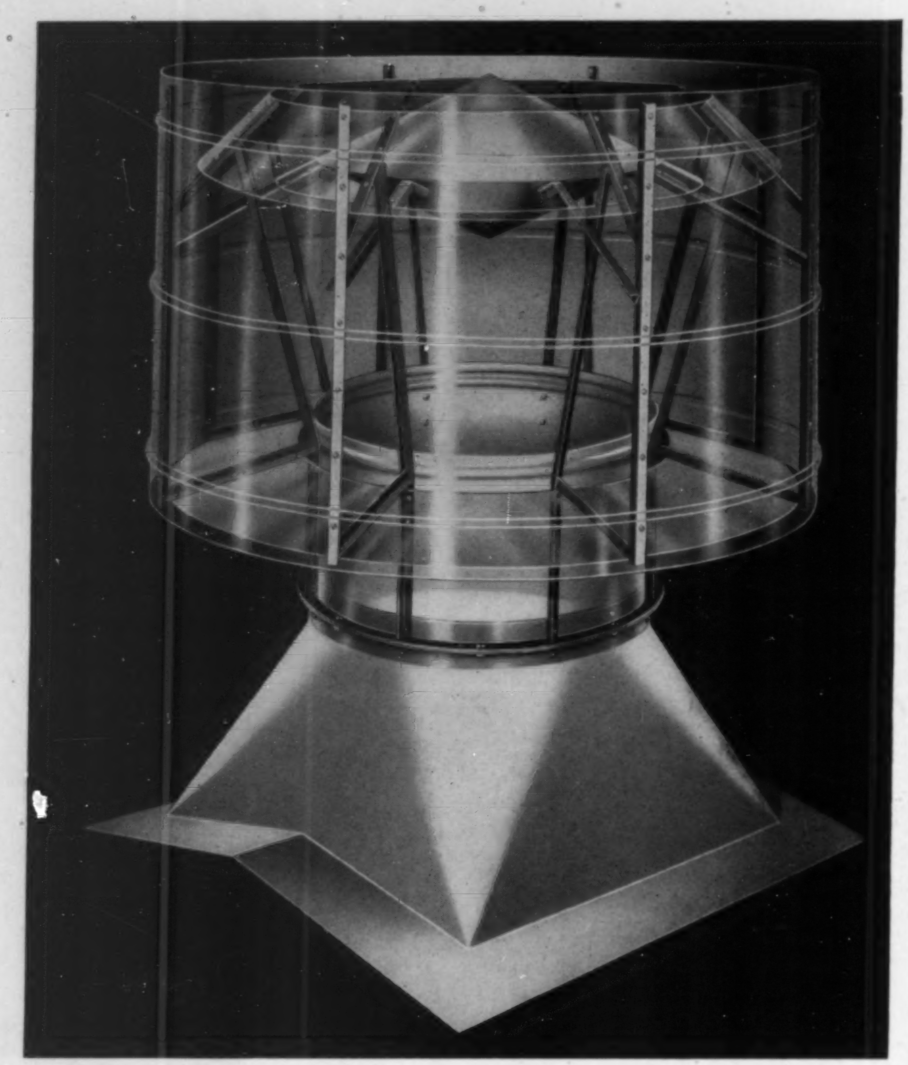

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REQUIRED READING

(*Continued from page 28*)

SCHOOLS

The American School and University: 1947–48. New York 16, N.Y. (470 Fourth Ave.), American School Publishing Corp., 1947. 8¼ by 11 in. 650 pp. illus. $4.00.

This 19th edition of a familiar year book contains an unusually good selection of articles of interest to the school architect. Among them are several on specialized subjects: "Modular Design," by A. Gordon Lorimer; "Interior Walls in School Buildings," by Eberle M. Smith; "Radiant Heating for School Buildings," by Ernest J. Kump; "Good Seeing Conditions in Schools," by Leonard V. James; "Good Hearing Conditions in Schools," by Karl R. Schwarz.

PAINT

The National Paint Dictionary. By Jeffrey R. Stewart. 3rd ed. Washington, D. C. (P.O. Box No. 173, Benjamin Franklin Station), Stewart Research Laboratory, 1948. 6 by 9 in. 704 pp. illus. $7.50.

In the six years since the last edition of the "Paint Dictionary" appeared many new terms have been developed, making an enlarged edition imperative. Apart from this addition of terms, however, and the correction of errors and omissions, the dictionary remains essentially unchanged.

The hundreds of terms defined fall into six categories: "(1) industrial raw materials used in the production of paints and allied products; (2) trade names of raw materials and certain finished products; (3) terms describing processes, methods, systems, etc.; (4) terms denoting scientific instruments used primarily for evaluation purposes; (5) terms denoting colors, optical effects, textures, etc.; and (6) miscellaneous terms which give general information to the reader, jargon expressions peculiar to the industry, etc." The terms are alphabetically arranged, defined with utmost simplicity, and occasionally illustrated.

TECHNICAL BULLETINS

TERMITE CONTROL

Termites. Prepared by O. J. Baker and Dudley L. Pope, Jr. Baton Rouge 3, La., Low-Cost Housing Research Engineering Experiment Station, Louisiana State University, 1947. 8½ by 11 in. 8 pp. illus. Gratis.

What termites are, what they do, how to find them, how to get rid of them, and how to prevent them, is explained concisely and clearly in this latest bulletin issued by the Louisiana State University Low-Cost Housing Research Experi-

(*Continued on page 160*)

ARCHITECTURAL RECORD

REDUCING THE COST OF HOUSES

NATURALLY every factor in the home-building field is looking for ways to reduce the cost of building houses, and just as naturally, for ways that do not reduce its particular and individual share of profits or wages. There's the rub! But the whole subject needs to be examined less subjectively, more objectively, even to an analysis of the cost of designing houses.

There are two types of operation to be considered: (1) houses in large-scale development projects where machinery, on-site-fabrication, pre-assemblies, timed crew rotation and standardized repetitive plans reduce costs; and (2) the individually-designed custom-built house for the individual owner. For the first category (obviously more economical than the second) further cost reduction seems to lie in the direction of further improvement in techniques toward the fully industrialized house manufacture, more scientific design, more efficient use of materials, and, perhaps most important and feasible in the near future (according to large-scale builders), the elimination of pyramiding profits inherent in the present method of merchandising and distributing building materials and equipment. Also, many items of equipment might be redesigned for cheaper production costs, less material, fewer processes.

In the second category, the individual custom-built house, these factors also apply in greater or less degree. But in this classification the proportion of cost incurred for plan, design and supervision increases to the point of being a major consideration, and, to many, a seemingly disproportionate expense. Contradicting this view is that of the architectural profession that these services create value far in excess of cost, and frequently save more than the professional fees through efficient space-use in planning, through economy of design and detail, and by insuring quality of materials and workmanship through competent supervision.

However true this is, the public has not been universally convinced and often seeks to eliminate or circumvent the architectural fee. The profession might well therefore (1) concentrate on convincing the public of the value of its services, (2) find ways to integrate its services with that of actual construction, or (3) find ways to reduce the costs of designing and supervision.

Course No. 1 is obvious, but deserving of greater emphasis. No. 2 would suggest that the architect take the sub-contractor's bids and become the administrator and executive of the job, a return to the "master builder" concept of architecture. This would place upon the architect, or his deputies, additional tasks and responsibilities. It incidentally might make the practice of small-house architecture more lucrative to the architect and still insure reduced cost to the client.

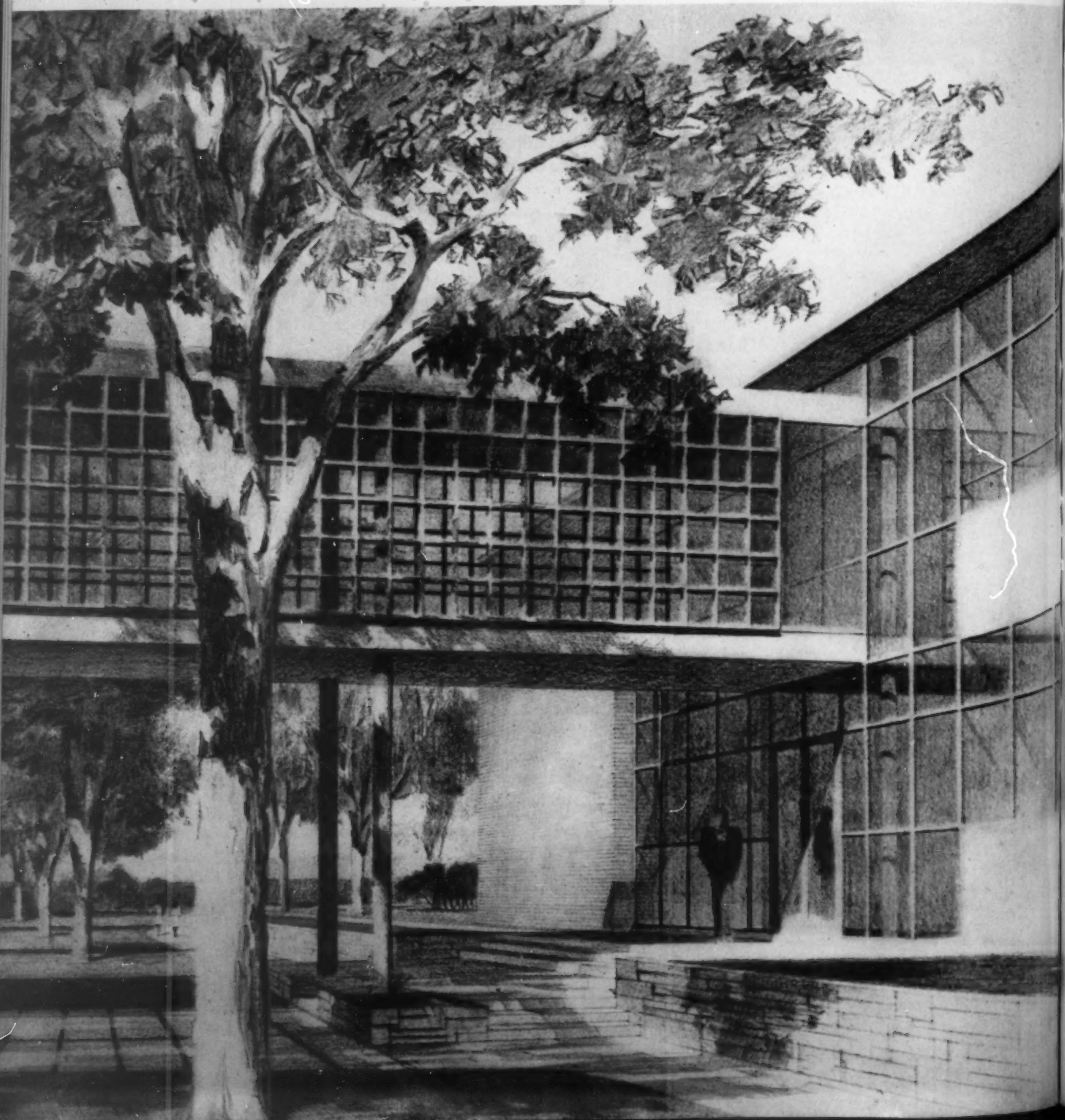
Alternative No. 3, reducing the cost of the design factor alone, involves increasing office efficiency and also might well indicate repetitive use of plans and even consideration of stock plan possibilities — but that is another story, for another time.

Kenneth K. Stowell

EDITOR

COLLEGE PLANNING

After a twenty-year lull we find college planning changed most decisively in precisely its broadest aspects. Impossible, therefore, to attempt any kind of "guide to accepted practice." Instead, the editors have concentrated on one superior example of thorough planning technique — the work of the Saarinens for Drake University. They present the thinking of one man of proved architectural wisdom and academic experience — Dean Hudnut of the Harvard Graduate School of Design. They outline the planning procedures adopted by one energetic and discerning urban university — Massachusetts Institute of Technology



ARCHITECTURAL RECORD'S BUILDING TYPES STUDY NUMBER 132

A UNIVERSITY CAMPUS PLAN UNDER WAY

FOR DRAKE UNIVERSITY, DES MOINES, IOWA

Saarinen, Swanson and Saarinen, Architects*

COLLEGE attendance in the U. S. is surpassing all records. A total of 2,338,326 students in institutions of higher learning, reported by the U. S. Office of Education, exceeds 1946 figures by 12½ per cent, and surpasses the 1940 peak by about one million.

Drake University, at Des Moines, with her prewar enrollment of about 1000 students, has an expansion problem no less than New York University, now serving 46,000; and Drake is more typical.

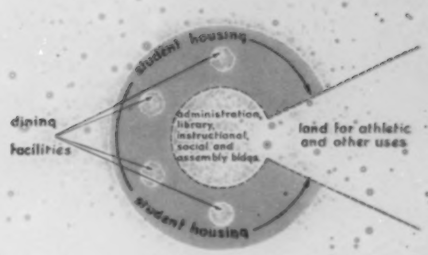
By long-range planning, President Harmon hopes to conserve energy, preserve a general direction, avoid all possible back-tracking, keep growth coherent — and pleasant.

The accompanying graphic illustrations by no means constitute a "presentation" of something finished. Like a tree, such a planned institution produces finished leaves, and the beginning of new main roots, simultaneously. The Science and Pharmacy Building (pages 74 to 81) is already under construction; dormitory plans for the first group (pages 84 to 87) are well studied but still subject to possible major revision; the ultimate campus plan (page 83) is still strongly diagrammatic.

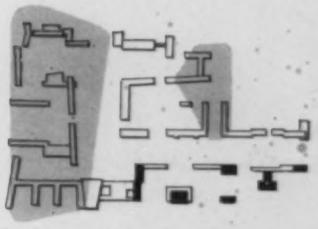
Typically, a college is a fairly complete community within the town or city. It has its working quarters at the center, surrounded by residential areas, open to recreation (Diagram A). Specific situations distort the details (B, C, D). Chief modifying factors are: land, transportation, existing plant, central services.

One consequence of growth not generally appreciated by university administrators is a *shift in the intangible center of gravity* of the institution. Existing buildings, now central and important, may be peripheral later both in situation and in visual influence. Architect planners must be allowed to center on this future, not on the past.

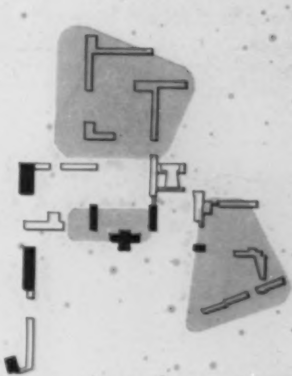
*** *Campus plan by Saarinen, Swanson and Saarinen. Science and Pharmacy Building by Saarinen, Swanson and Saarinen; Brooks-Borg, Associated. Preliminary dormitory plans by Saarinen, Saarinen and Associates***



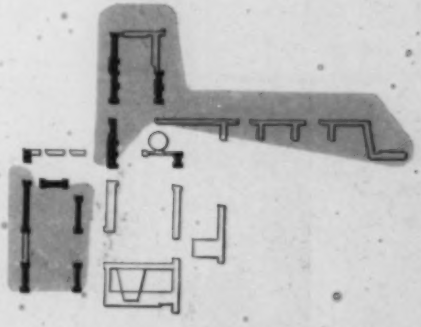
A



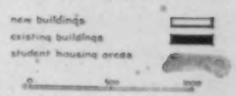
B



C



D



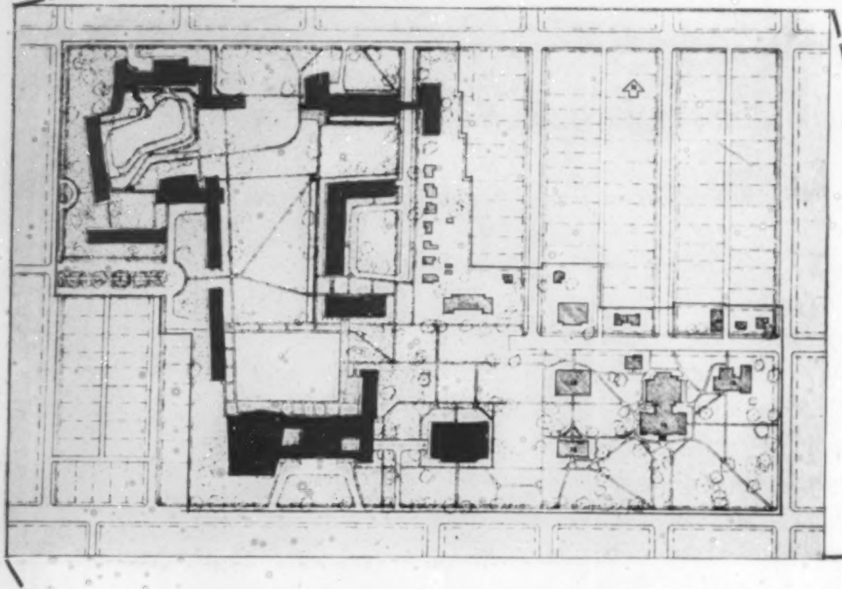
A. Basic elements of a university as a "community within a community"

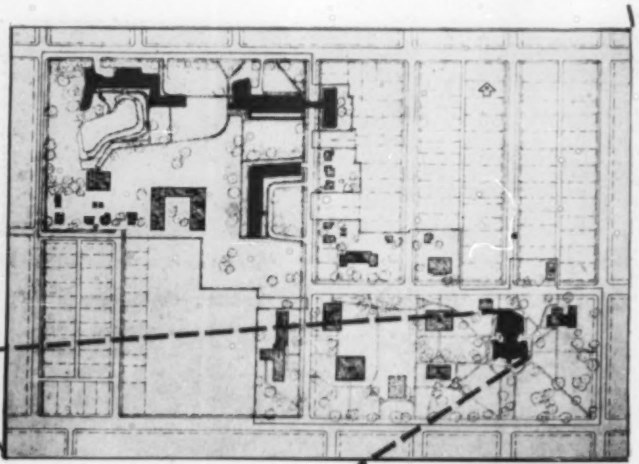
B. Drake University, existing and projected. Student housing shaded

C. Antioch College plan: same basic elements, different distortions

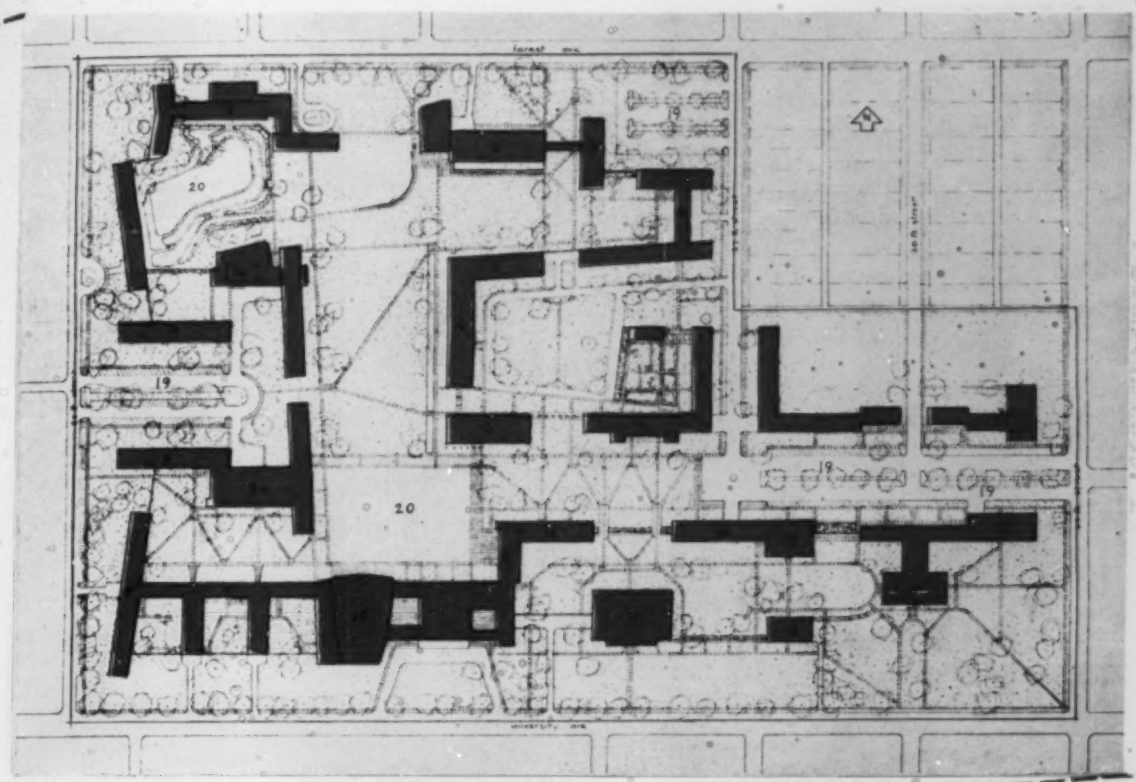
D. Stephens College, early planning stage. All by the same architects

Rendered by J. Henderson Barr





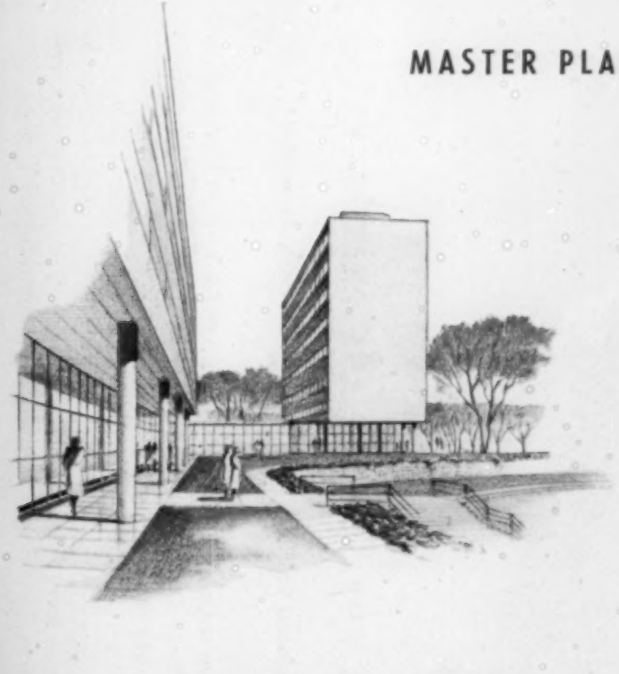
Quintessence of Victorian "collegiate," the old administration building speaks for its day. Sketches for new dormitories, across-page, speak for ours with corresponding eloquence



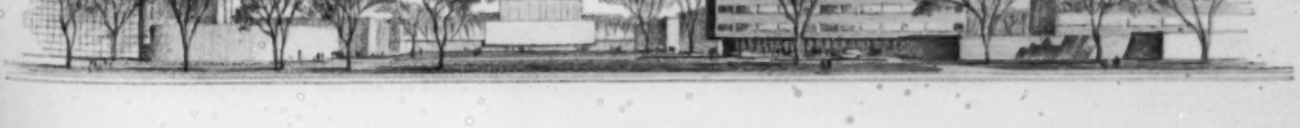
KEY TO PLAN

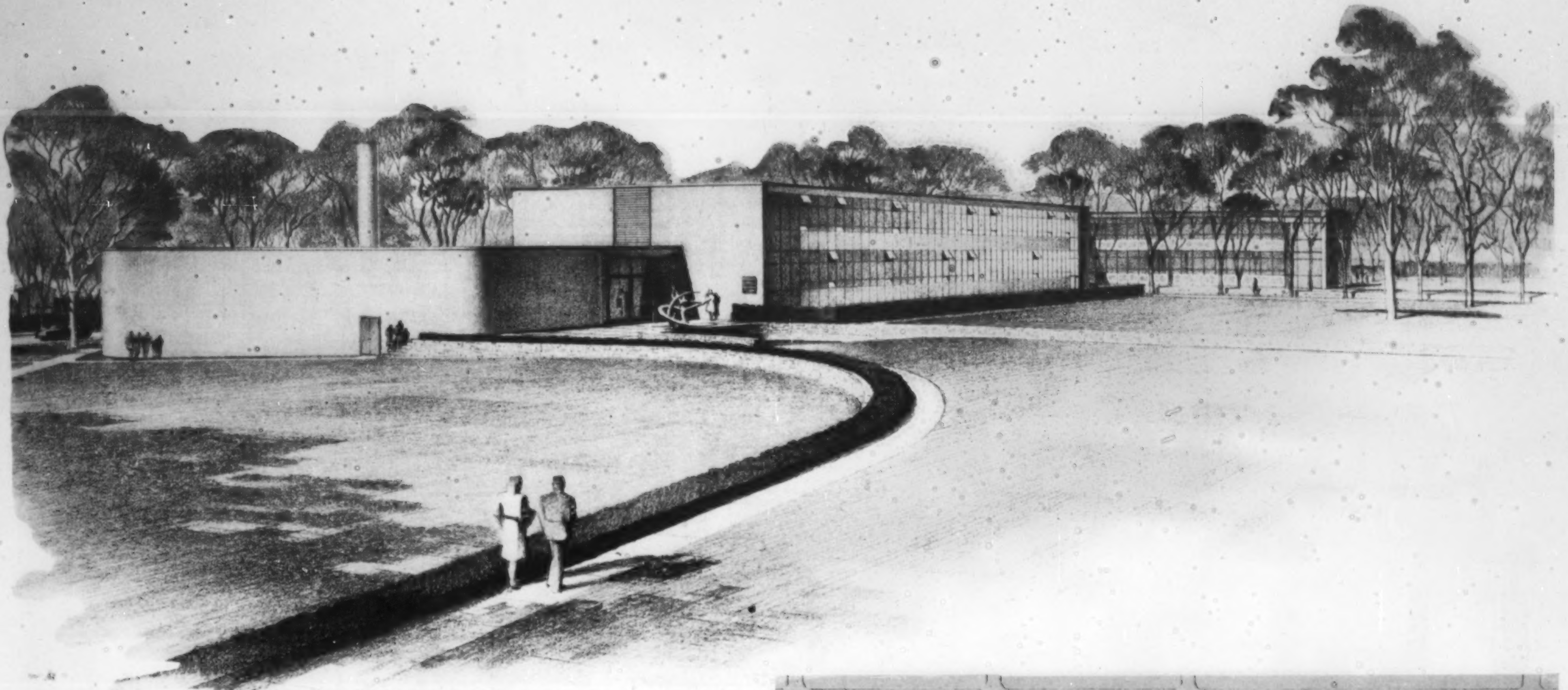
1. Women's Dormitories
1a. Dining Hall
2. Harvey Ingham Hall of Science
3. Fitch Hall of Pharmacy
4. Liberal Arts
5. Commerce
6. Journalism
7. Law School
7a. Law School Dormitory
8. Future Dormitories
9. Men's Dormitories
9a. Dining Hall
10. Auditorium
11. Cowles Library
12. Carnegie Library
13. Cole Hall
14. Administration
15. Howard Hall of Music
16. School of Religion
17. Fine Arts
18. Unassigned
19. Parking
20. Pool

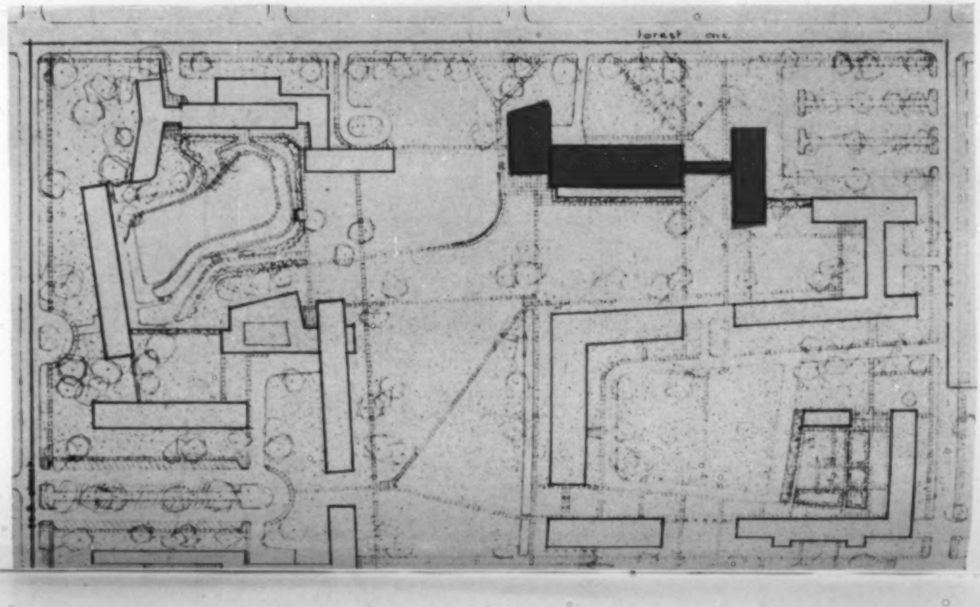
MASTER PLAN SHIFTS CENTER OF GRAVITY



In clockwise rotation, plans seen on these two pages show successive stages of contemplated growth. The first added group already begins to pull the "center of gravity" from southeast toward northwest. The process somewhat resembles the creation of city squares, each built successively of, and by, its own time. Development gradually circles back toward the point of origin. The oldest buildings are then connected up and absorbed as an incident in the larger harmony.



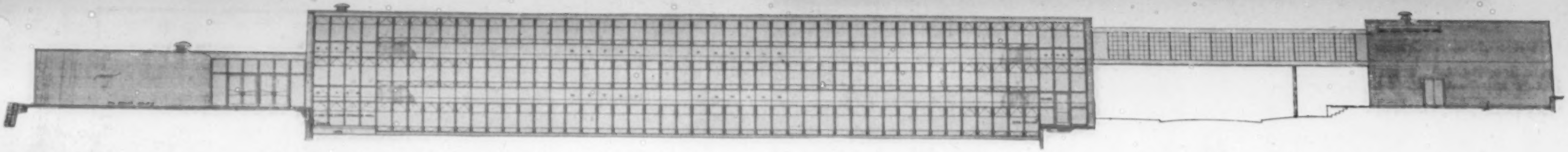




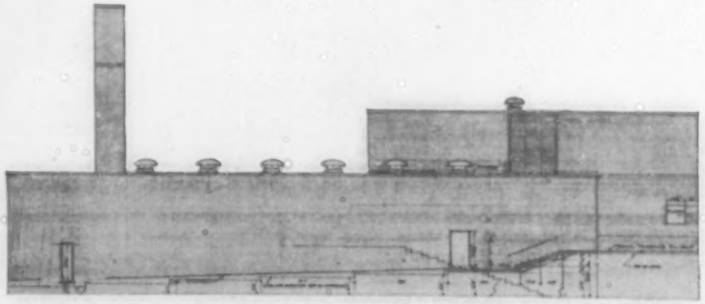
BUILDINGS FOR SCIENCE AND PHARMACY

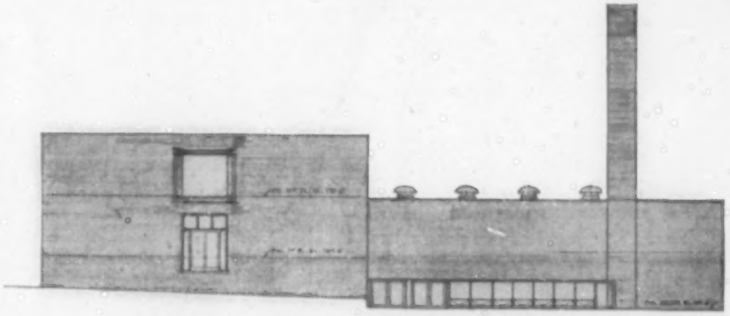
Saarinen, Swanson and Saarinen, Architects; Brooks-Borg, Associated

This is the first new Drake University unit to go forward. It is now under construction. The architects have sought to meet the *specific* demands of the program and at the same time produce a *typical* contemporary building of its kind. On the principle that university funds should be used to the limit in making education available to all possible applicants, architectural elements have been abjured that are costly, non-productive, purely "decorative," in favor of a beautifully proportioned design.



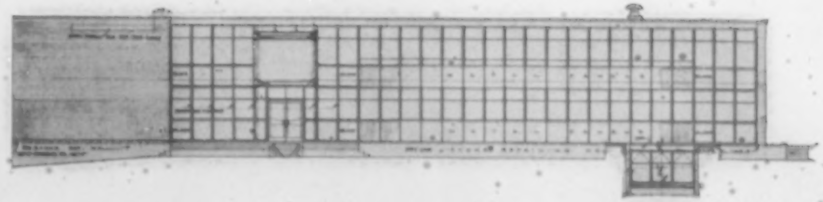
South Elevation, both buildings

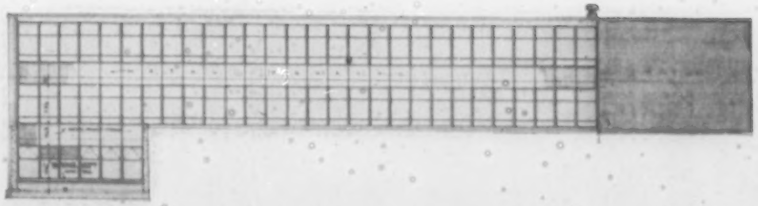




West Elevation, Science Building

East Elevation, Science Building

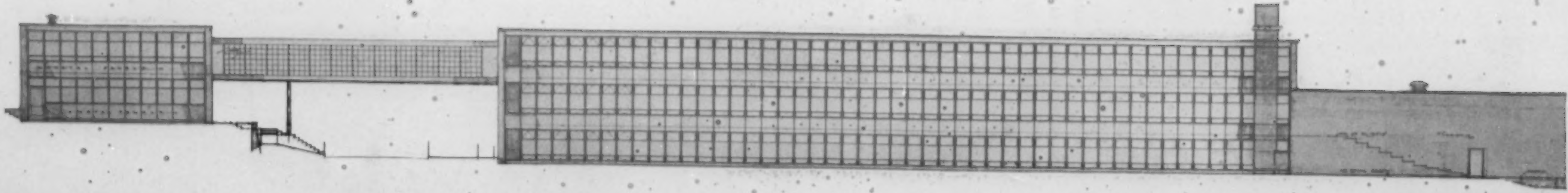




West Elevation, Pharmacy Building

East Elevation, Pharmacy Building

North Elevation, both buildings



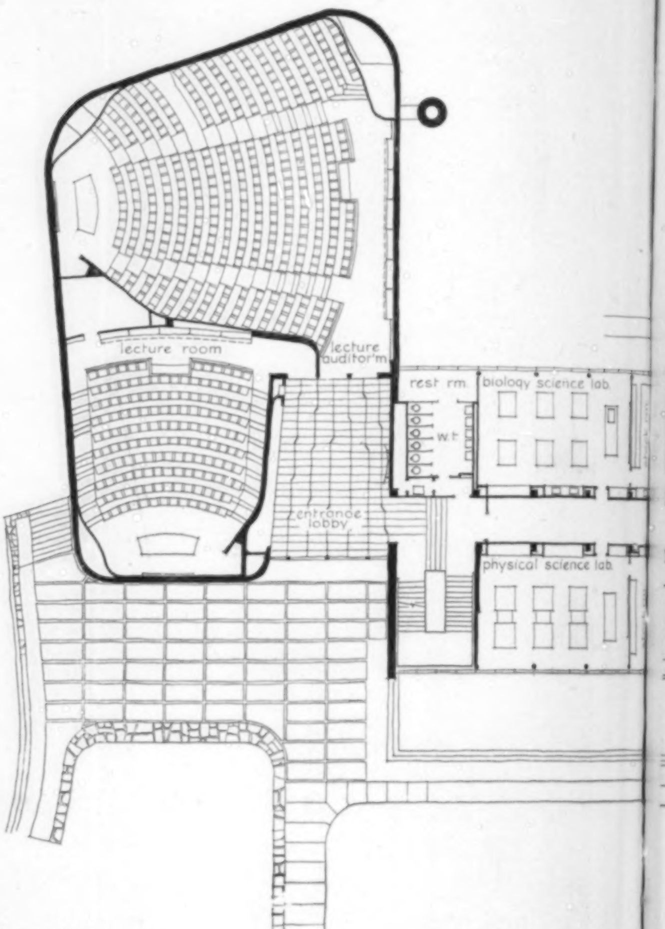
PLANS, BUILDINGS FOR SCIENCE AND PHARMACY

In any laboratory building of today there are three main elements to be arranged: laboratory rooms, lecture halls, and offices (apart from service facilities such as the power plant). Laboratories and offices require changeable lengths in a simple rectangular shape. Lecture halls are permanent in shape but require convenient access for lecturer and audience.

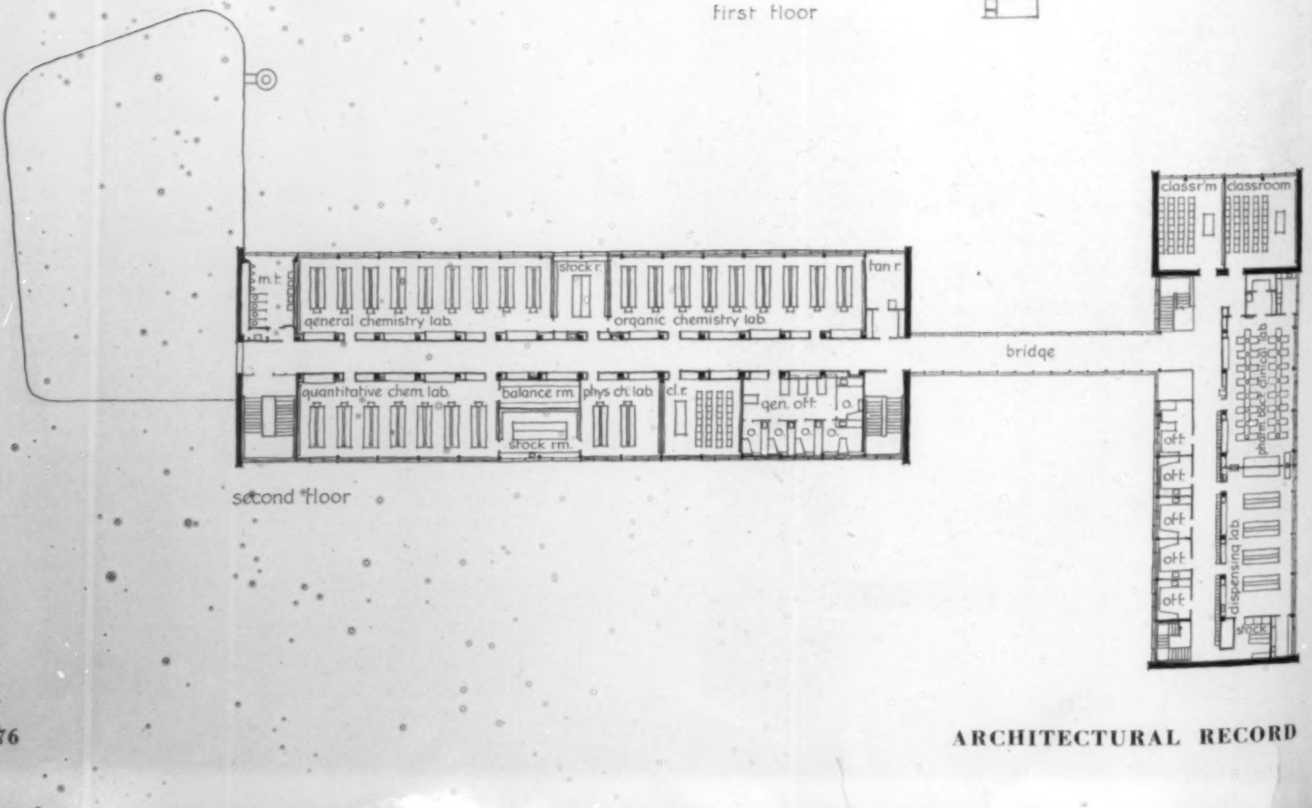
The central frame of reinforced concrete and the curtain wall in this example permit a wide range of interior arrangement and rearrangement within the main wings.

In the lecture-hall wing, for the sake of exterior contexts of the building, the architects have deviated from the usual symmetrical plan. Student access is held very direct, and the preparation rooms for lecturers will be found (top, right-hand page) on the ground floor.

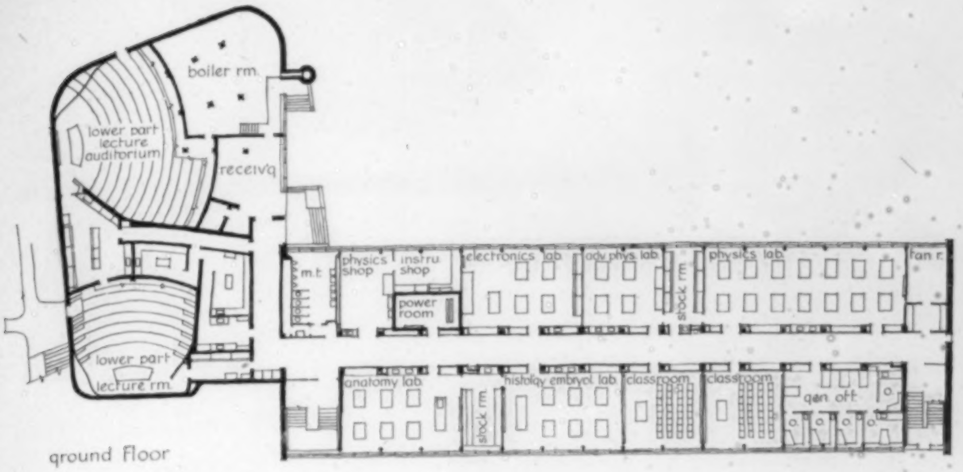
The rendering shows the Pharmacy Building from beneath the connecting bridge.


lecture room
lecture auditor'm
rest rm
w.t.
biology science lab
biolo
entrance lobby
physical science lab
physi

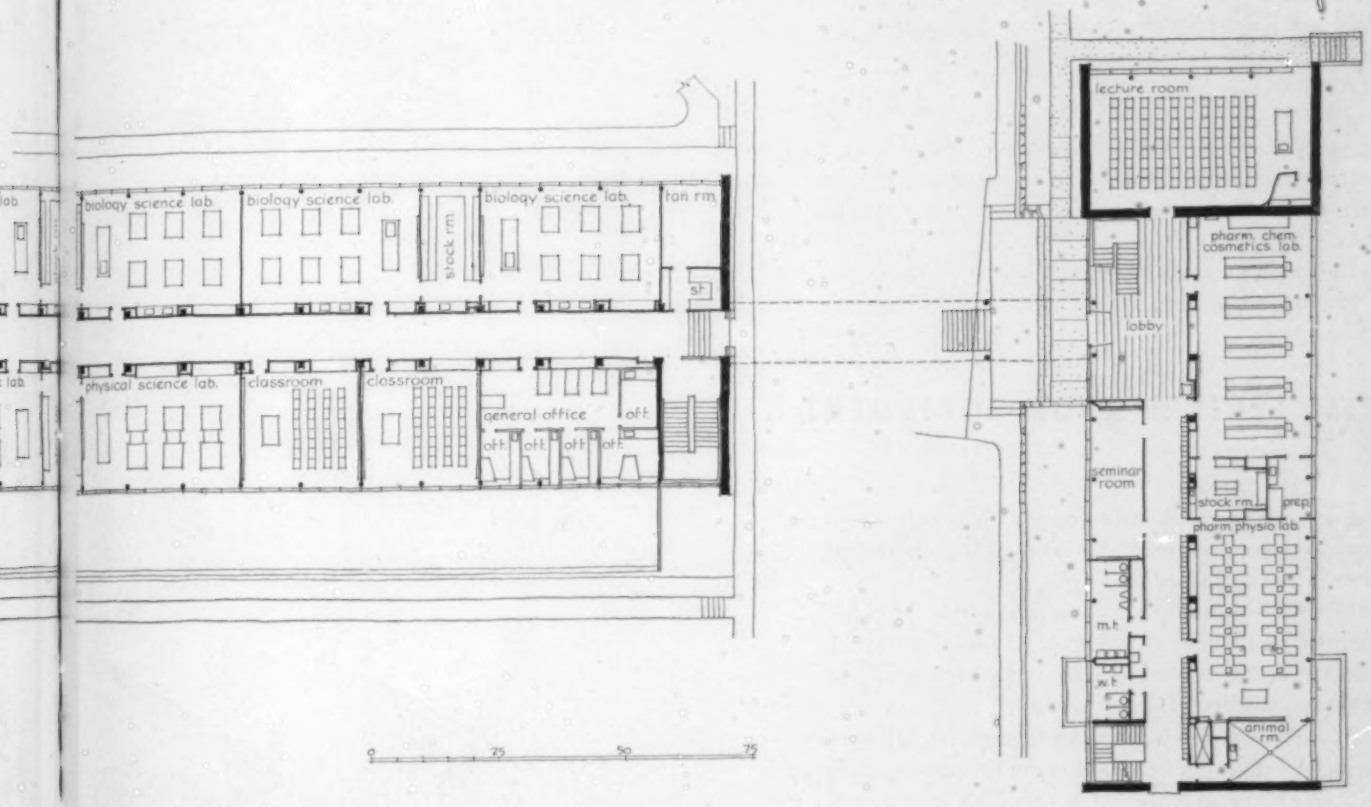
first floor

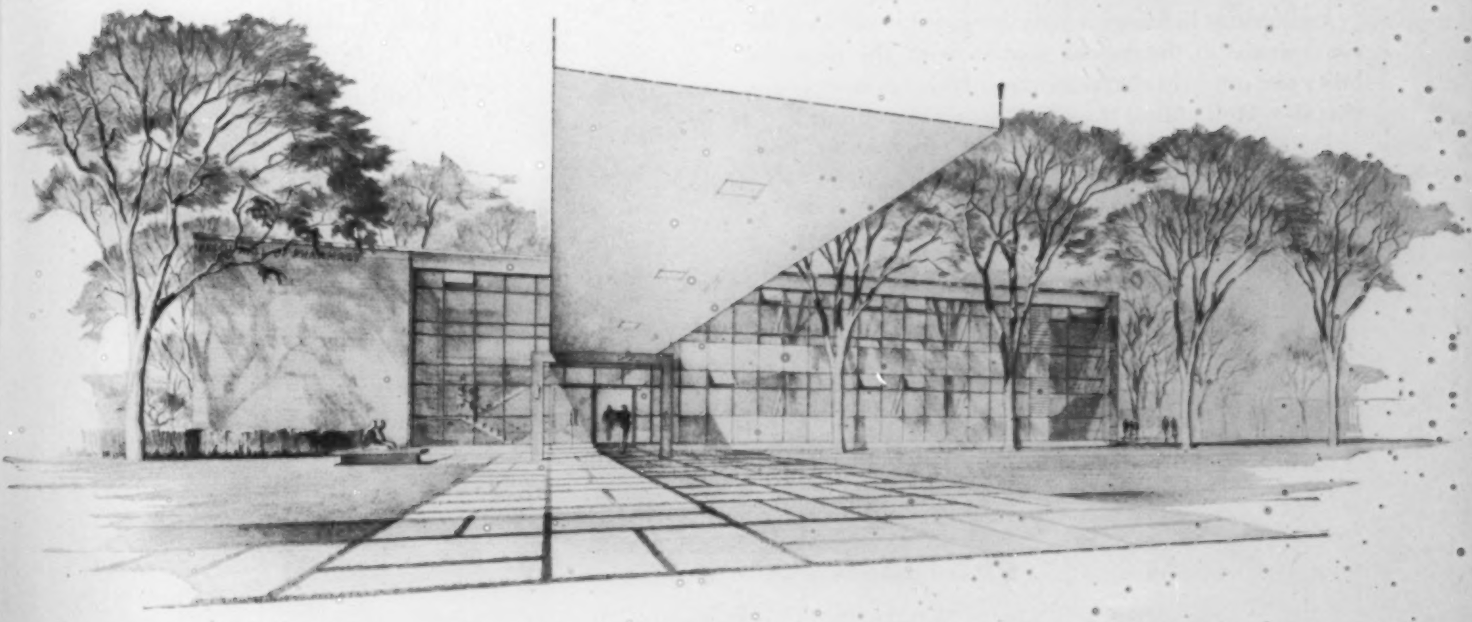

m.t.
general chemistry lab
stock r.
organic chemistry lab
fan r
bridge
quantitative chem. lab
balance rm
phys ch. lab
cl. r
gen. off.
o.
stock rm.
classr'm
classroom
pharm. bact. clinical lab
off.
off.
off.
off.
off.
dispensing lab
stock

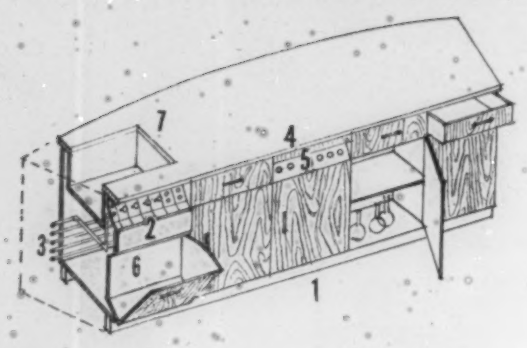
second floor


boiler rm.
lower part lecture auditorium
receivq
m.t.
physics shop
instru. shop
power room
electronics lab.
adv. phys. lab.
stock rm.
physics lab.
fan r.
lower part lecture rm.
anatomy lab.
stock rm.
histology embryol. lab.
classroom
classroom
gen. off.

qround Floor

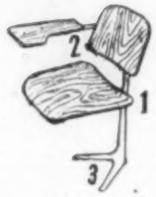

lab.
biology science lab.
biology science lab.
stock rm.
biology science lab.
fan rm.
st.
lab.
physical science lab.
classroom
classroom
general office
off.
off.
off.
off.
off.
lecture room
lobby
pharm. chem. cosmetics lab.
seminar room
stock rm.
prep.
pharm. physio lab.
m.t.
w.t.
animal rm.
0
25
50
75





LECTURER'S BENCH

1 Flush wood doors
2 Control panel, hinged front, concealed fluor. light, controls for distilled, cold, hot water, compressed air, vacuum, gas, a.c. and d.c. current
3 Pipe space
4 Space for folding metal reading stand
5 Control panel for lights for blackboard, top spot-light and reading stand, also push buttons for indicator lights on projector stand
6 Hinged plywood waste bin with removable metal container
7 Stone top and sink



SEATING (Possible Design)

1 Molded plywood seat and back based on design by Charles Eames
2 Plywood book support
3 Metal frame bolted to floor

SPECIAL LECTURE ROOM EQUIPMENT

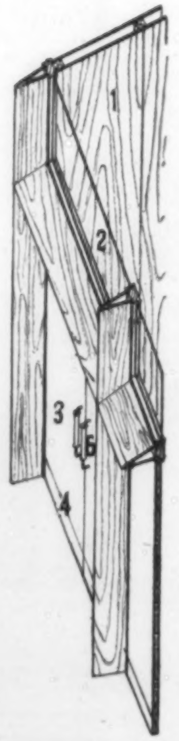
Here we see the comprehensive care with which a conscientious architect carries a master plan to its ultimate execution in the form of buildings.

Scientific lecture auditorium equipment is "special" in its nature, and this is an example of complete detailing. The lecturer's bench and the projector stand in particular are worthy of special study.

Equal care was devoted to details common to all sorts of buildings — door hardware, lighting fixtures, and the like.

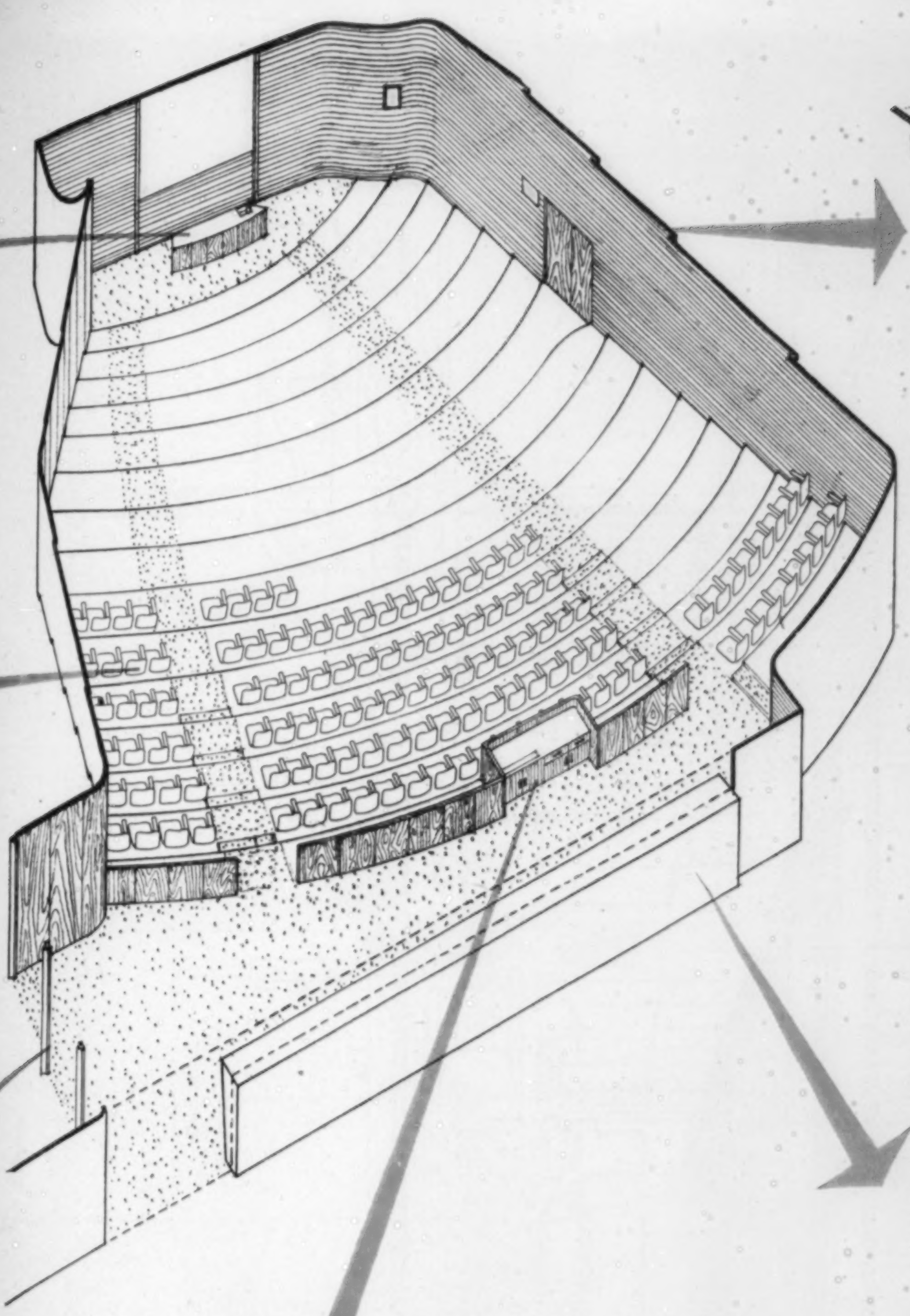
Auditorium lighting, it may be noted, combines the convenience of fluorescent sources with the dependability and different characteristics of incandescent bulbs. (Stanley McCandless was the lighting consultant.)

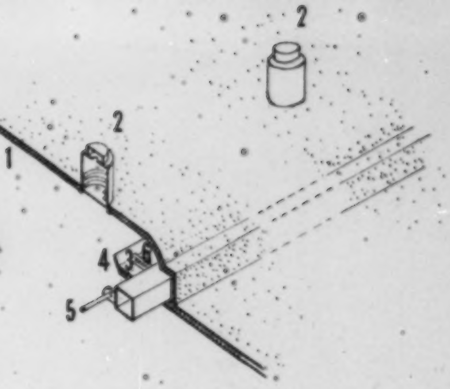
The seating method is "suggested" only, on the basis of a well known design by Charles Eames.



ENTRANCE DOORS

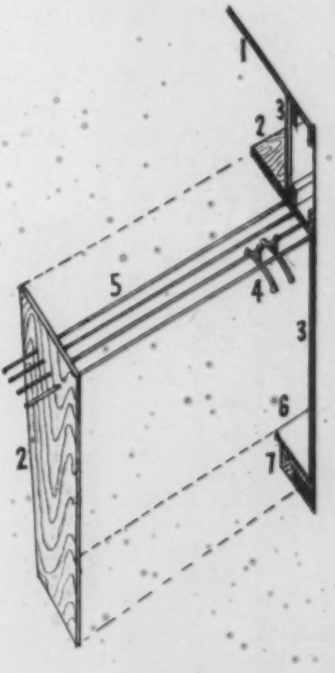
1 1⅜" plywood
2 Plate glass
3 Wood doors covered with fabricoid
4 Formica plates
5 Wood pull grips on ½" rods





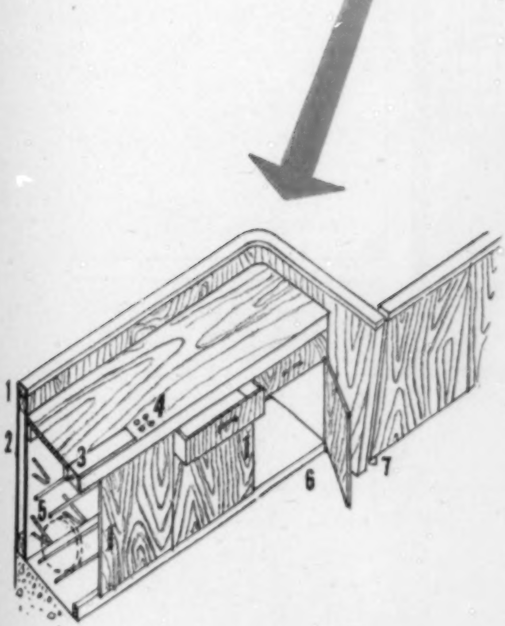
LIGHTING

1 Acoustic plaster
2 Downlights approx. 5'0" o.c.
3 ¾" channels
4 16 ga. metal
5 Indirect lighting—40 w. tube light, wireway and ballast space
6 Aluminum foil reflector



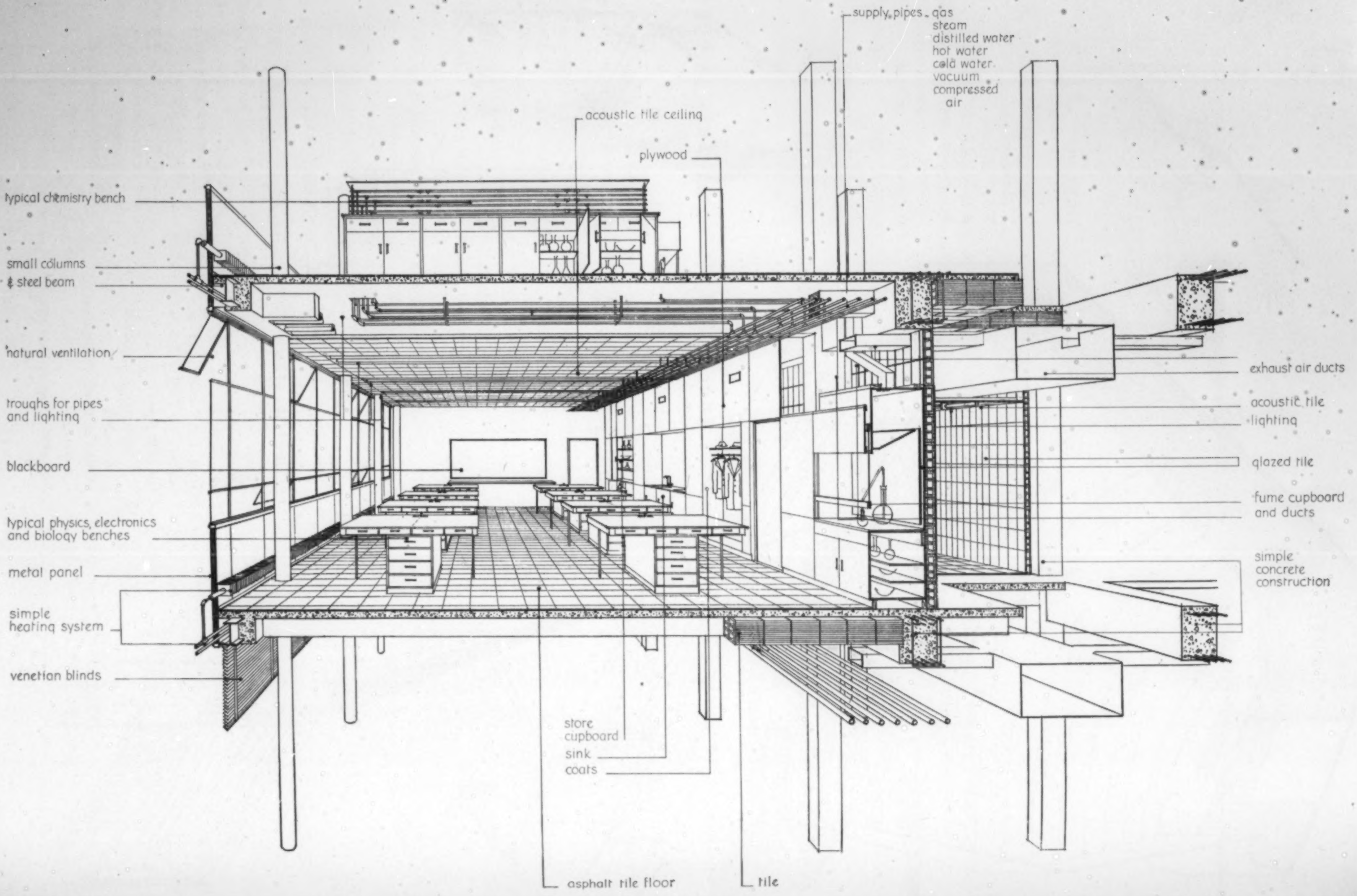
COAT RACK

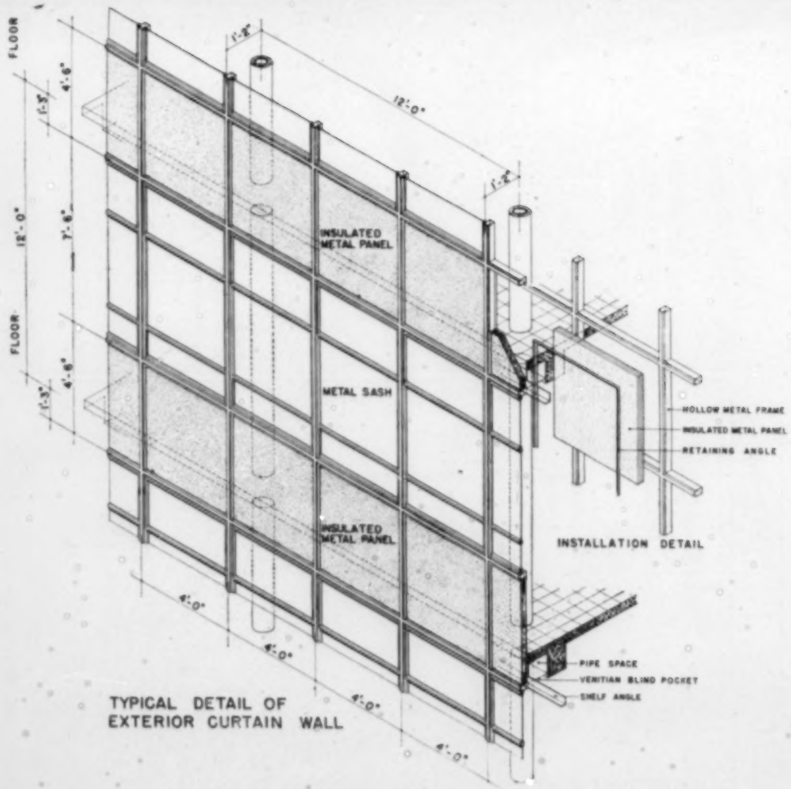
1 1" acoustic plaster
2 1⅛" top, ends and partitions
3 Perforated transite and sound absorbing blanket
4 Cast aluminum coat hangers
5 1" s.s. pipe rails
6 Linoleum flooring
7 Painted concrete base



PROJECTOR STAND

1 Hardwood cap
2 ⅜" plywood
3 Tube light, glass top and bottom
4 Indicator lights
5 ½" metal rods and supports for film reels
6 Movie and slide projector store cup'd
7 Pipe supports for rear screens


supply pipes - gas
steam
distilled water
hot water
cold water
vacuum
compressed air
acoustic tile ceiling
plywood
typical chemistry bench
small columns
& steel beam
natural ventilation
troughs for pipes and lighting
blackboard
typical physics, electronics and biology benches
metal panel
simple heating system
venetian blinds
exhaust air ducts
acoustic tile
lighting
glazed tile
fume cupboard and ducts
simple concrete construction
store cupboard
sink
coats
asphalt tile floor
tile

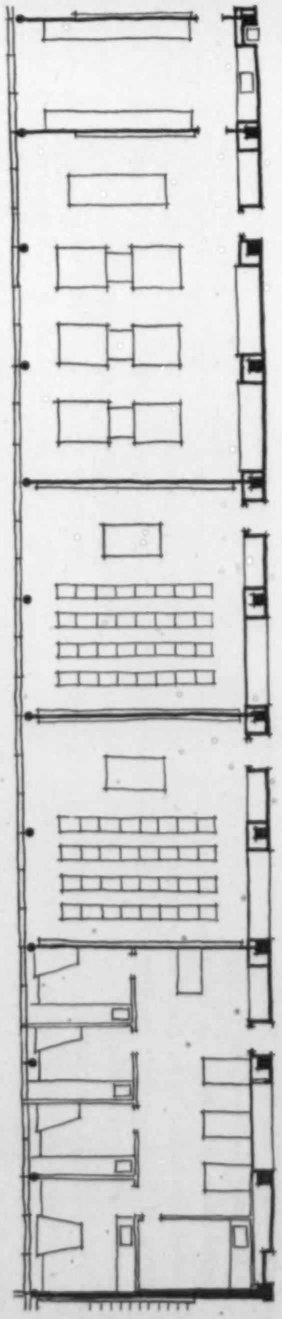

FLOOR
4'-6"
1'-3"
12'-0"
7'-6"
FLOOR
4'-6"
1'-3"
1'-8"
12'-0"
1'-2"
INSULATED METAL PANEL
METAL SASH
INSULATED METAL PANEL
4'-0"
4'-0"
4'-0"
4'-0"
HOLLOW METAL FRAME
INSULATED METAL PANEL
RETAINING ANGLE
INSTALLATION DETAIL
PIPE SPACE
VENITIAN BLIND POCKET
SHELF ANGLE

TYPICAL DETAIL OF
EXTERIOR CURTAIN WALL

STANDARDIZED LAB STRUCTURE AND SUPPLY SYSTEM

In the cut-away perspective (top page) there is opened to study a direct and uncomplicated basic structure of concrete frame, and a supply system in which the longer runs are *horizontal* instead of vertical (as they are in many of the recent industrial installations). For still further economy, and accessibility, pipes are left revealed against the ceiling, not concealed. Ducts and fume exhaust are hidden, however, in the continuous closet space along inner walls. Interior framing and exterior curtain wall are adapted to unit subdivision (seen at right).

UNIT SUBDIVISION


1-Bay storage
3-Bay laboratory
2-Bay classroom
2-Bay classroom
3-Bay office space

MAIN FACTORS IN THE DORMITORY PROBLEM

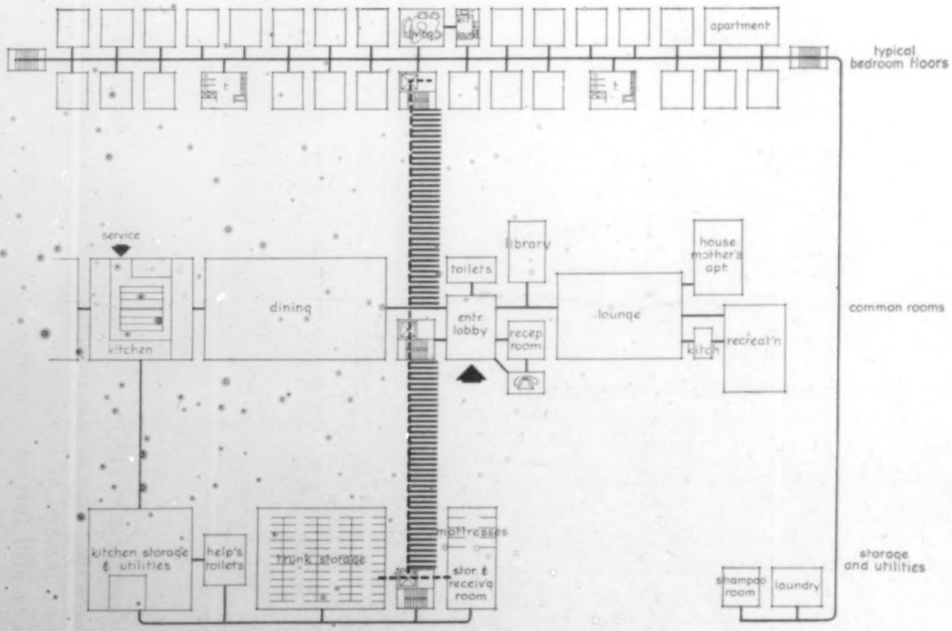
Alone among college or university buildings, dormitories are usually self-liquidating and may be financed by investment money. Cost and efficiency are important. Tabulations based on outlay "per student" or "per room" can, however, be misleading when not based on comparable situations in relation to: housing men or women; inclusion of kitchen and dining room costs and *degree* of food service; laundry facilities; lounges and recreational provisions; size of student rooms and number of students per room; amount of built-in and movable equipment and furnishings; type of finish.

One school of dormitory planning regulates building unit size by a dining room capacity of around 75, two dining rooms off each kitchen. The Saarinens have, however, concluded that midwestern college girls are not averse to an outdoor walk to meals, and have accordingly proposed one large ring-shaped general dining room, open to view on three sides, to serve a group of dorms, in addition to individual dining rooms in *some* dorms.

Another school of thought starts from the supposed desirability of some limited number of students, either per floor or per entrance. In the present study this number is allowed to vary considerably from one unit to the next.

Another important question relates to passenger use of elevators, essayed in a 6-story element of the Drake project (see succeeding pages). The architects have reasoned that the shafts and machinery are needed in any event for trunk lifts and can economically receive further development. This is still under study by the university. The chosen method of handling trunks is, incidentally, always a major factor in deciding on placement of service entrances and arrangement of the basement in a dormitory.

In studying any dormitory, say the architects, it is highly useful to evolve a functional diagram of relationships, as below. Yet to *build* the units in diagrammatic form, all alike, would be to deprive life of spice.

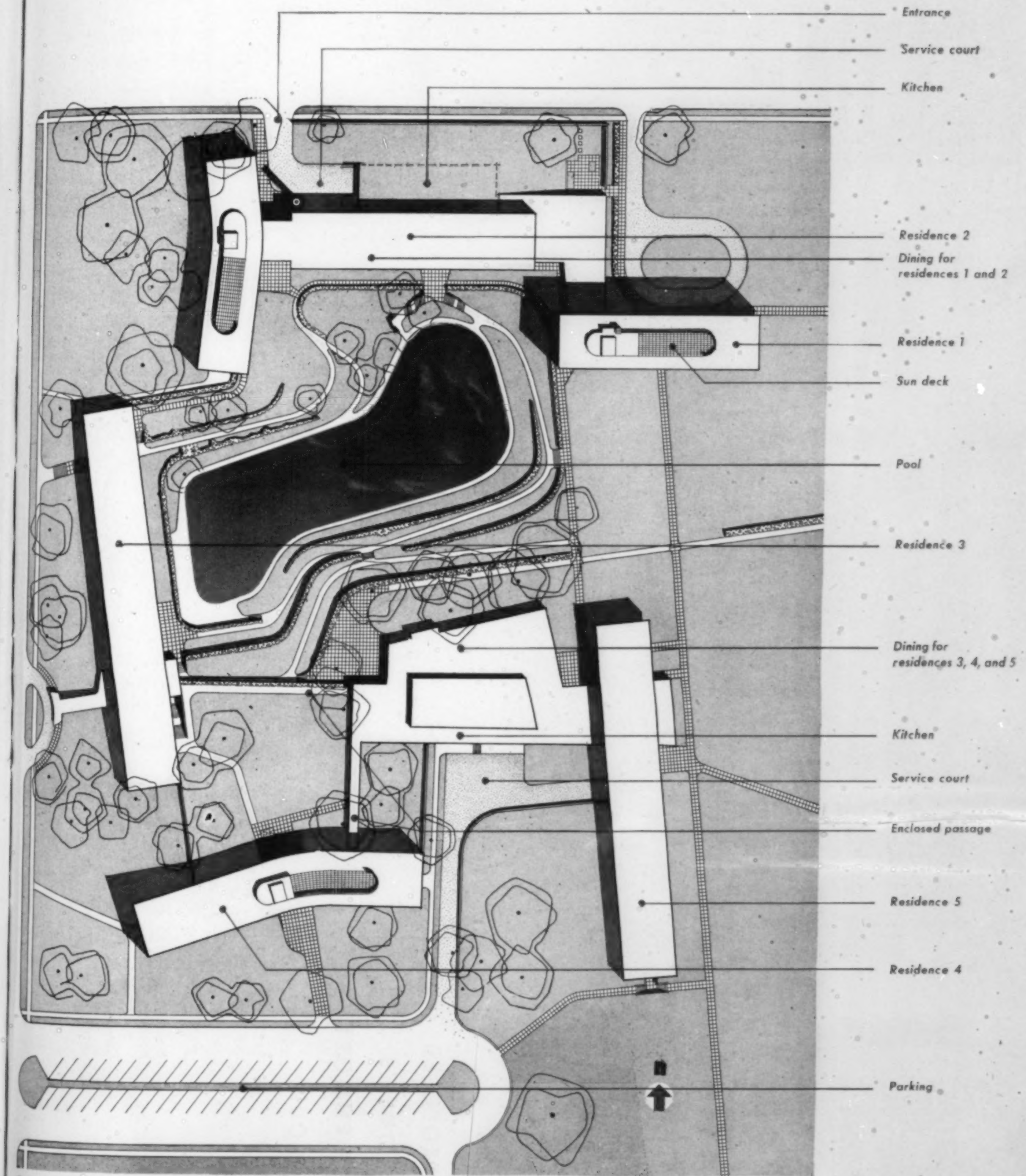

apartment
living
typical bedroom floors
service
kitchen
dining
toilets
library
entr lobby
recep room
lounge
house mother's apt
kitch
recreat'n
common rooms
kitchen storage & utilities
help's toilets
trunk storage
mattresses
stor & receive room
shampoo room
laundry
storage and utilities

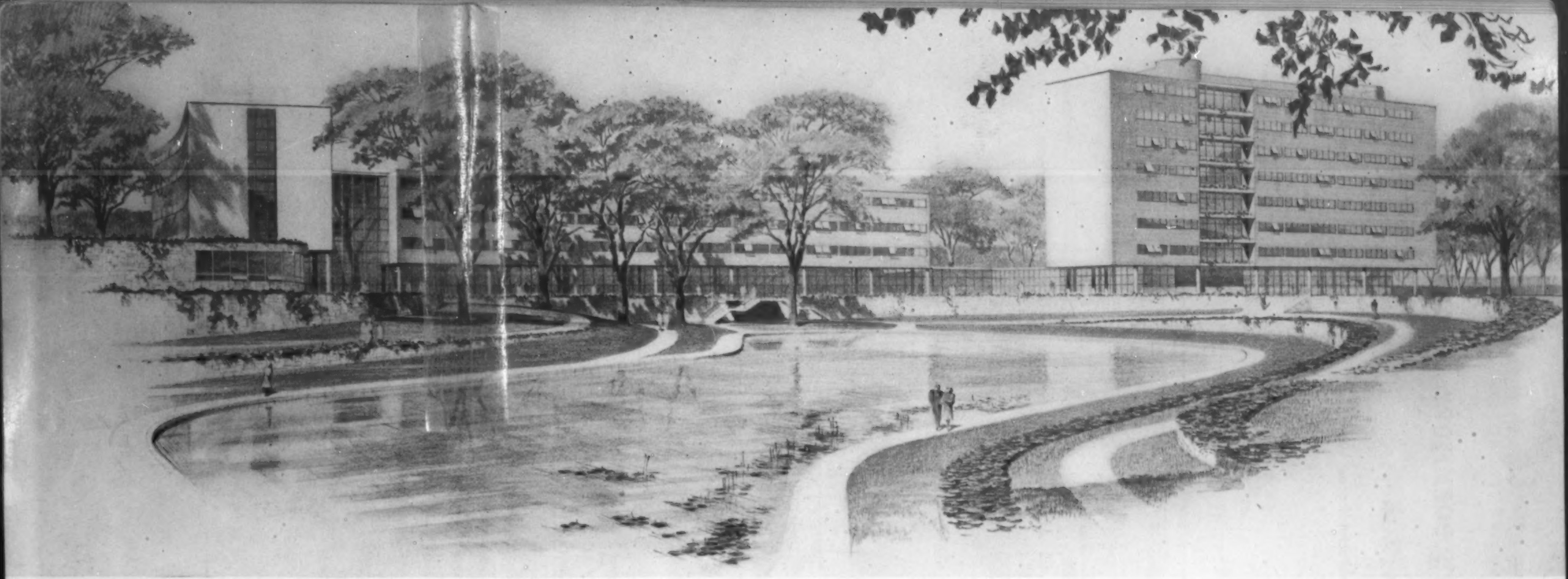
Showing how a diagrammatic analysis is set up for a specific dormitory problem (Drake University)

PROPOSED WOMEN'S DORMITORY GROUP

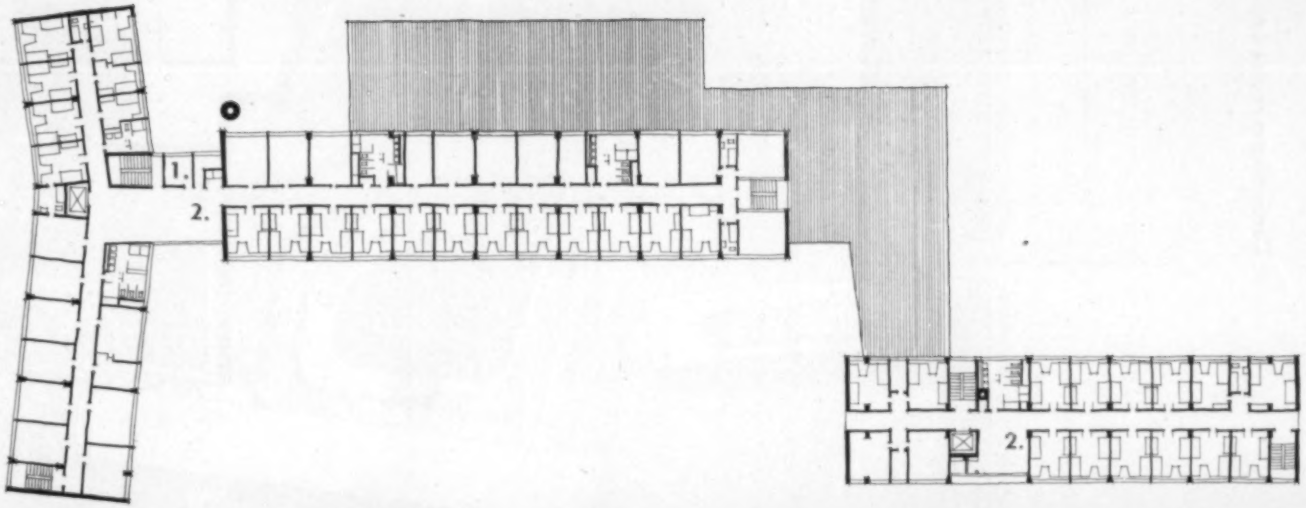
Saarinen, Saarinen and Associates, Architects

Converting a ravine into an architectural asset


Entrance
Service court
Kitchen
Residence 2
Dining for residences 1 and 2
Residence 1
Sun deck
Pool
Residence 3
Dining for residences 3, 4, and 5
Kitchen
Service court
Enclosed passage
Residence 5
Residence 4
Parking
N



PROPOSED WOMEN'S DORMITORY GROUP

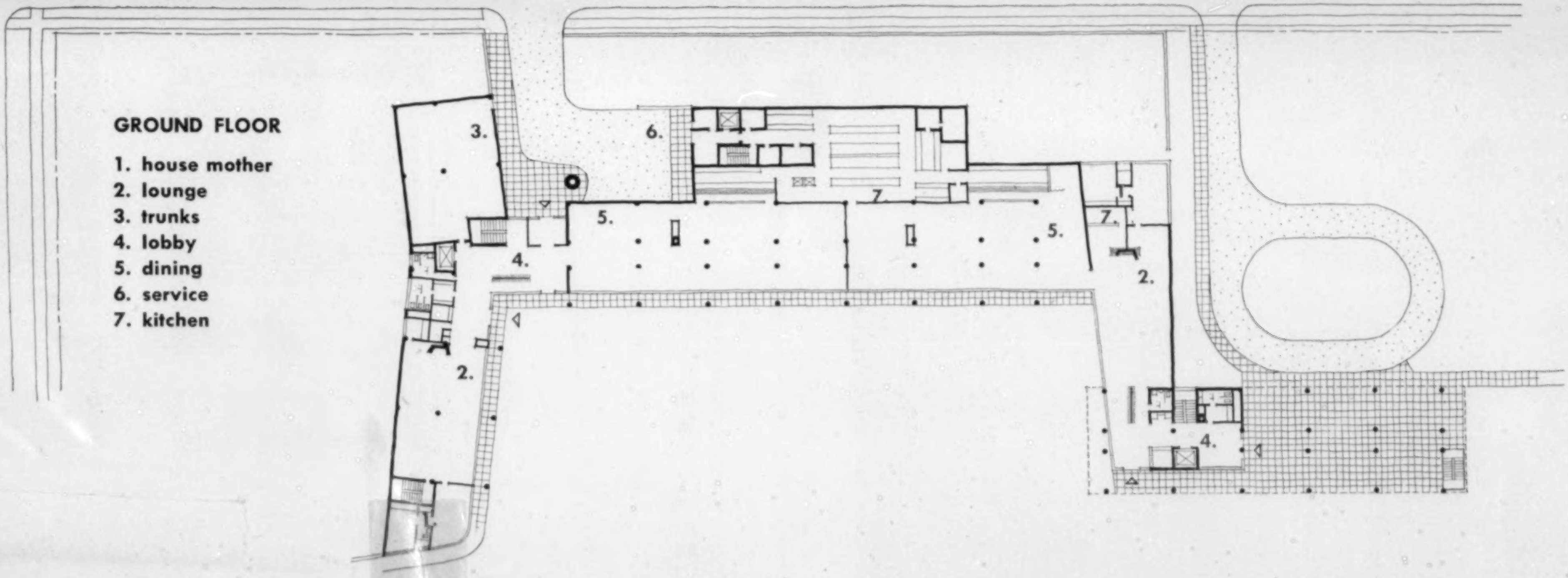


TYPICAL BEDROOM FLOOR

1. kitchen
2. dining

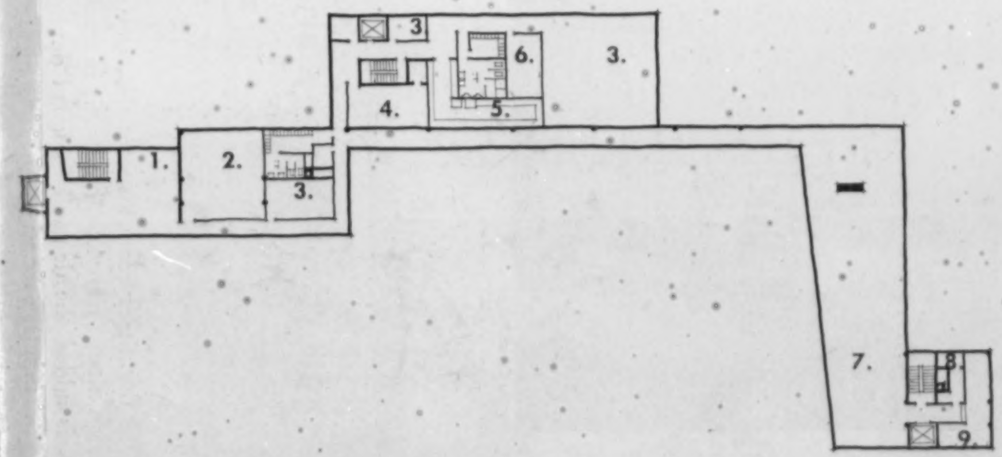
GROUND FLOOR

1. house mother
2. lounge
3. trunks
4. lobby
5. dining
6. service
7. kitchen


3.
6.
5.
4.
7.
5.
7.
2.
2.
4.

BASEMENT

1. trunks
2. boiler
3. storage
4. bake shop
5. dishwashing
6. mechanical equipment
7. storage and trunks
8. incinerator
9. laundry exchange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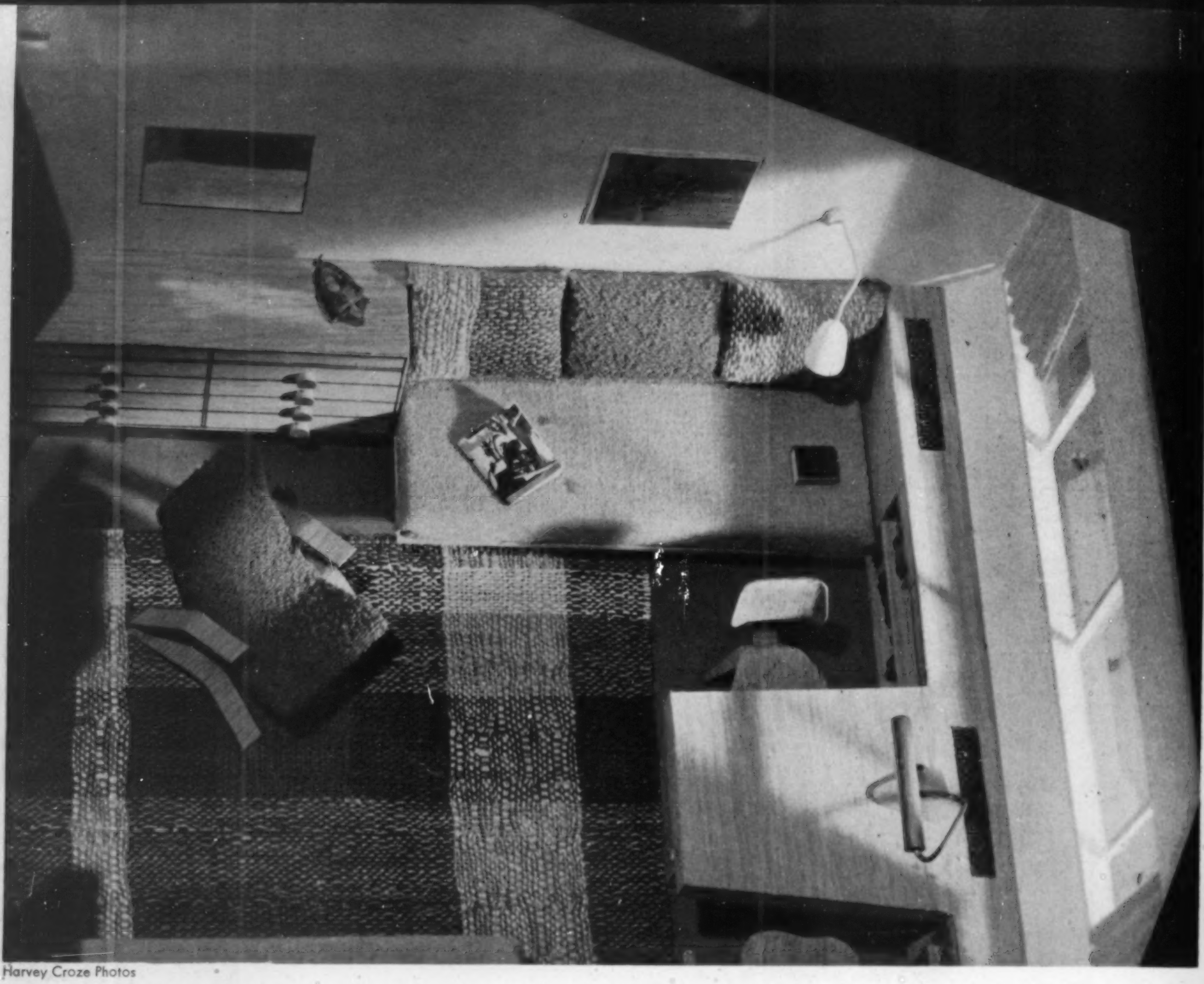


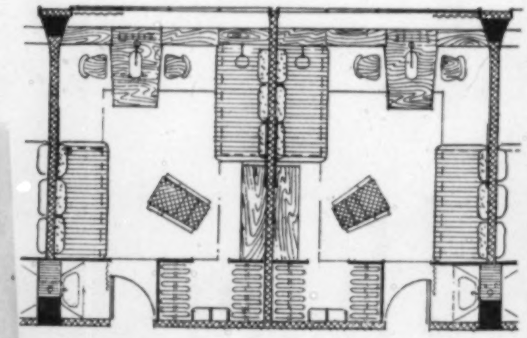
Harvey Croze Photos

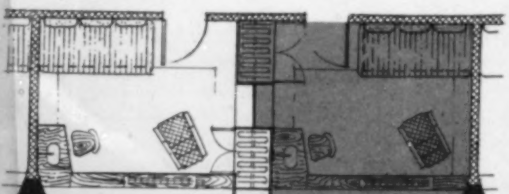
TYPICAL DORMITORY ROOMS FOR ONE OR TWO

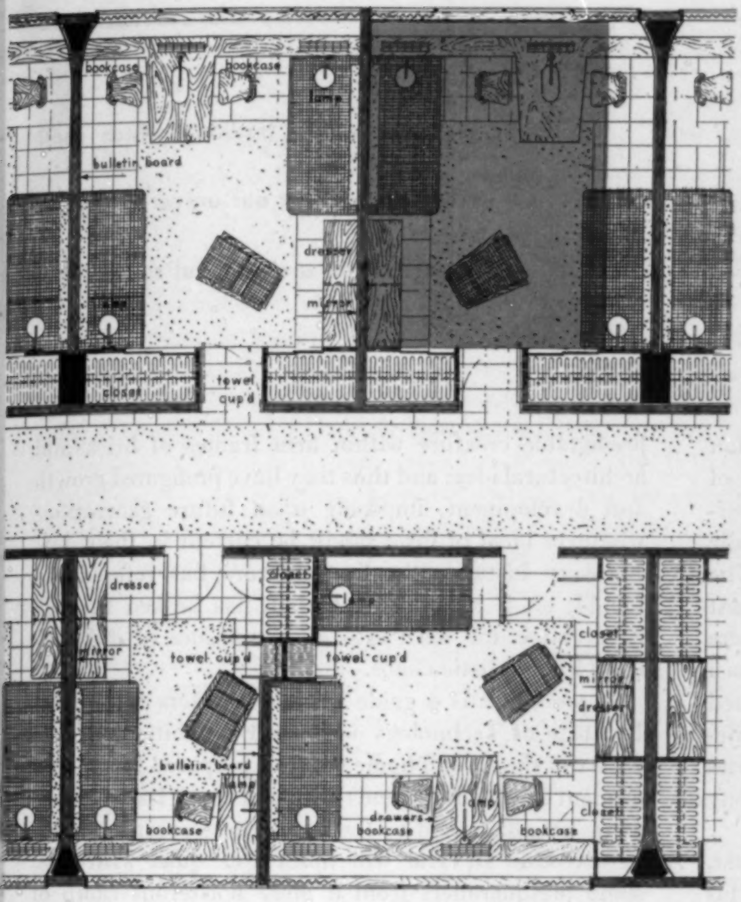
A dormitory room involves the fascinating problem of an almost complete living unit in small compass; there is added the demand for good daylight and artificial illumination for study — rarely met in colleges today.

The fenestration seen in the photograph above and the plan to the right of it is distinguished. The glass area is not exceptionally large; yet the ingenious splaying of *all* embrasures, above and below as well as at the sides, greatly diminishes glare and aids diffusion. The economy of a single desk leaves open the minor criticism that students face one another, yet this is better than facing the window.

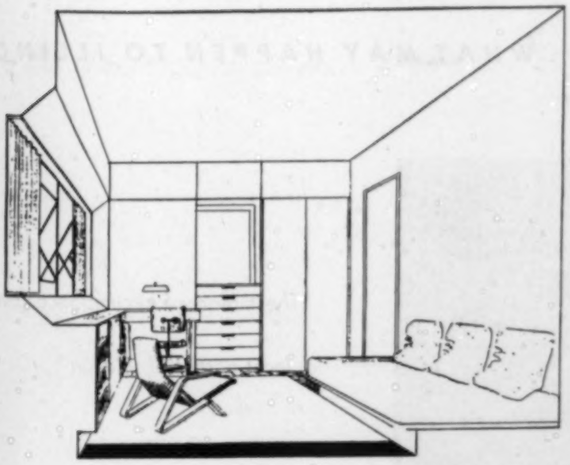
An early study (right, below) supplied a higher proportion of single rooms, gave the double rooms walk-in closets and wash basins. Eliminating the latter and offsetting the central row of columns made possible a greater density of comfortable occupancy.






bookcase
bookcase
lamp
bulletin board
dresser
mirror
lamp
closet
towel cup'd
dresser
closet
lamp
mirror
towel cup'd
towel cup'd
closet
mirror
dresser
bulletin board
lamp
bookcase
drawers
bookcase
lamp
bookcase
closet

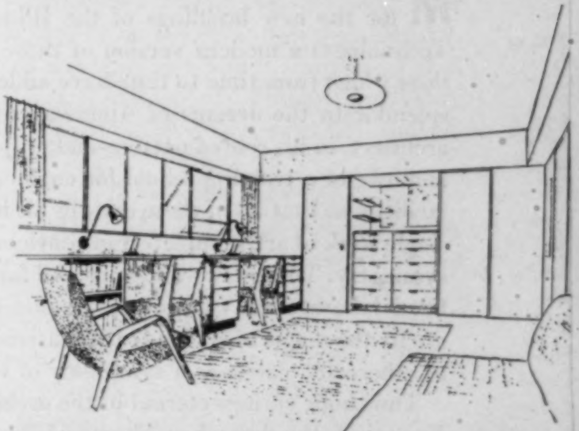
Double rooms are introduced on both sides of the corridor by offsetting the central line of columns. Note splayed column shape in outer wall

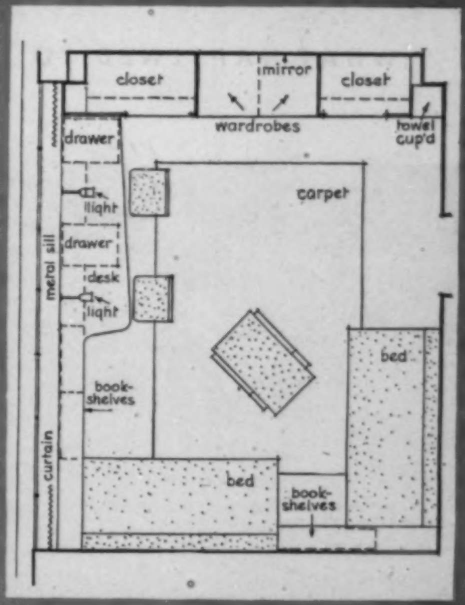


Single room as evolved in an early study shows the specially splayed head and sill of moderate sized but efficiently placed windows

AT ANTIOCH COLLEGE

This earlier dormitory plan achieves a nice articulation of the room into three loosely defined areas for study, relaxation, and dressing. The demands in terms of building periphery are correspondingly larger than they are in the latest scheme for Drake University (drawing, left, and photo across-page)




closet
mirror
closet
wardrobes
towel cup'd
drawer
light
carpet
drawer
desk
metal sill
light
bed
book-shelves
curtain
bed
book-shelves

ON FORM IN UNIVERSITIES

By Joseph Hudnut

Dean of the Harvard Graduate School of Design

"We need a new tradition which shall at long last deliver our universities from the vagaries of architectural succession"

MR. MIES VAN DER ROHE has prepared a general plan for the new buildings of the Illinois Institute of Technology: a modern version of those *grand compositions* which from time to time have added brief periodic splendor to the dreams of American universities. The architect, in his role of pattern-maker, joins the present facilities of a training school for engineers to its future facilities so that all of these exist in his imagination as a single work of art, complete and timeless in its perfected symmetry. The noisy workshops and foundries, the life-filled laboratories, classrooms, gymnasia and libraries are by the magic of art made the materials of a harmony as ethereally classic as a symphony of Haydn.

Thus hope springs eternal in the architectural breast. Ever since the day when Thomas Jefferson laid out his neat scheme for the University of Virginia — and no doubt since long before — architects have thus played with universities, corseting the body of a live and unpredictable creature within firm frames of brick and architectural idea; and thus they have prefigured growth and development, imposing upon future generations whatever ideal of form might be current in their day. In every instance the live creature has refused the mould; or, if temporarily bound, has broken through its architectural shell into great splashes of dishevelment and stylistic chaos.

If precedent is a guide in these matters the Illinois Institute of Technology will never inhabit more than a part of the crystal home which is prepared for it, each element of which depends so much upon its relevance to its neighbors and to the space these organize. Some new Gothic Revival will upset this quiet synthesis; some masqueraders from a more boisterous camp of modernists will join this *ballet mechanistic.* Such has been the fate of all architectural Edens.

The University of Virginia — no Eden, to be sure —

WHAT HAPPENED TO JOHNS HOPKINS . . . WHAT MAY HAPPEN TO ILLINOIS

"The thread of circumstance gives at least partial absolution"

may be thought an exception to this law; but we have forgotten the monstrous building which in Victorian times leaned against the Rotunda. That building was by the grace of God burned; and yet the architects who restored the damaged Rotunda, and who surely ought to have known better, closed the fine axial vista which welded the Lawn to the distant hills. That is a serious impairment, altering the character of Jefferson's design more radically than do the acres of dull buildings which now surround it. These are forgotten inside the quiet Lawn.

Jefferson's classicism, in spite of its Palladian origin, is strongly tinctured with showmanship. It is pure theater: a setting rather than a shelter. The group at Charlottesville does not depend, as does the Chicago project, on nice adjustments of plane and mass; it is, like all things baroque, less absolute in its creed, less inhospitable therefore to strangers. It will suffer less from change and addition. Baroque? What could be more baroque than the housing of university professors in the temples of the Roman gods? I was once a professor at Virginia and I know how gods can be uncomfortable.

The perfect flowering of the patterned university is no doubt Columbia, conceived as one vast monument. The Low Library there might be an equestrian statue raised on its Piranesi-like pedestal above a flight of steps that Le Notre might have imagined and encircled by the eternal solemn quadrilles of Italian palaces. A world put in order to fit the longings of the humanist soul. The impact of events upon such a world is far more shattering than upon those which are more humanly organized upon principles less abstract.

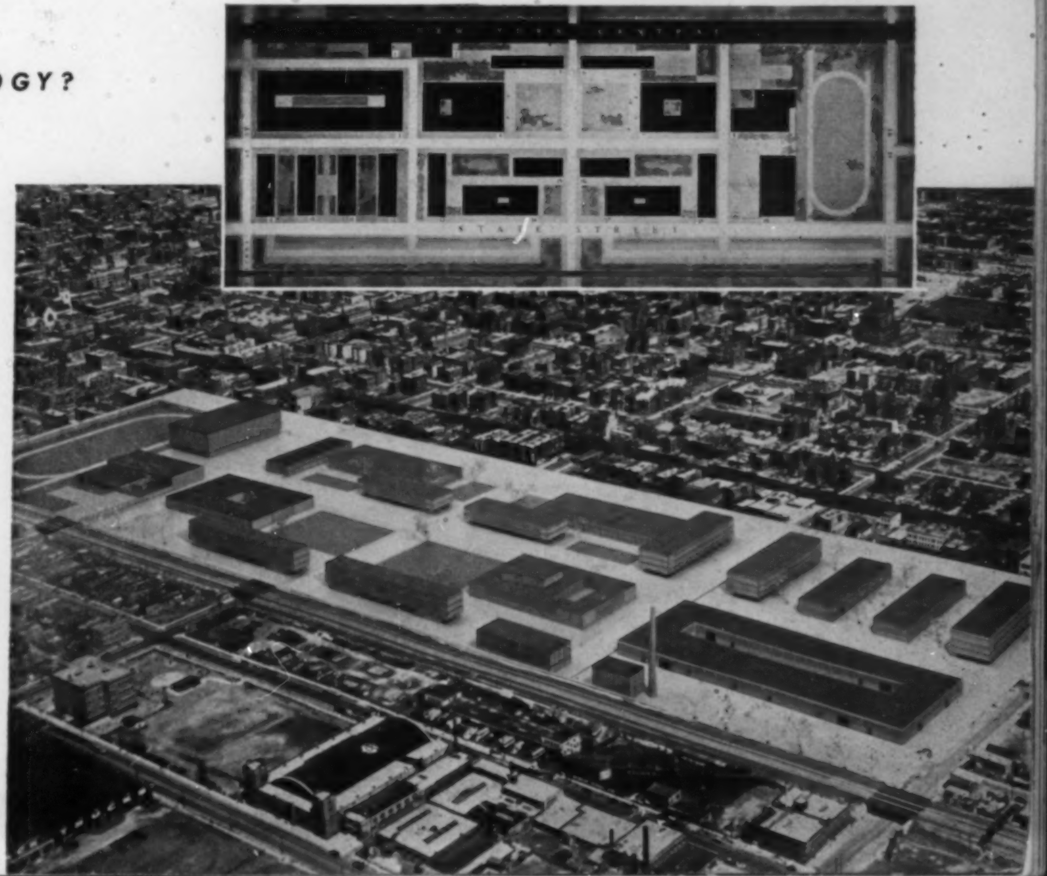
That is why, if I had to choose between Princeton and Columbia, I should choose Princeton. The buildings there are unified by style — by a principle of planning which is, like the textured walls, the traceried windows, the dormered roofs, an element of style; and that principle has become an adjunct, so to speak, of picture-making rather than of abstract relationships in mass and plane. When the ideal is quaint clutter and ye spirit of ye olden tyme, the planner can admit some accidents into his design and leave to his successor the privilege of an occasional whimsey. When, for example, you have to build a great new library, as intricate in form and as efficient in services as a Diesel engine, you can spread your medieval sauce over its surfaces without apparently the slightest impediment to its operation.

Incidentally, I have always liked those two white temples at the center of Princeton — perhaps because I think of them as hard marble peas in the slippers of the Gothicist. If you have such relics it doesn't seem to matter what you build around them. Dartmouth Hall is unruffled, as a gentleman should be, by the jejune buildings which face it or the little library near by, pretty enough to dance at the Senior Prom; and that "Christopher Wren Building" at William and Mary would, if transplanted to Ann Arbor, turn that university into a slum.

We should be grateful for such buildings, bestowed by the caprices of the gods, but we should not think of them as basic patterns from which, by imitation, we can develop a university pattern. They are not pegs upon which to hang a newly-manufactured tradition. I know a university which gave its jewels a greater brilliance by surrounding them with a square mile or so of paste — ancestor worship inconceivable to a Georgian architect.

I salute the Massachusetts Institute of Technology, corseted until recently in as heavy and implacable a precedent as ever haunted a classicist's dream: a Roman

INSTITUTE OF TECHNOLOGY?



"Perhaps there is here a guide-post to . . . new tradition . . ."

Mies van der Rohe, Architect

Plan photo: Williams & Meyer Co.
Air view background: Kaufmann & Fabry Co.
Courtesy Museum of Modern Art

emperor never imposed his will more tyrannously upon space and peristyle. Yet the new buildings at Tech — after a pious dome had been laid on the School of Architecture — are free, rational and contemporary in feeling. They poured only a little of their new wine into their Alexandrine bottle and then looked about for more crystalline receptacles.

It must be understood that my comments are not meant as admiration for all the new buildings projected at Tech. (I must ask the privilege of disliking at least one of them.) I am referring, obviously, to a program or policy in building: to the policy which refused the heavy direction of a dead hand.

I do not look upon such a policy, as some people do, as a betrayal of past friends — or, at any rate, as necessarily a betrayal. The new athletic building, containing the swimming pool, at Tech, for example, states with clarity and force a modern creed without offering any insult to the older buildings which it must companion.

It seems to me that this is the only policy possible for the new buildings of universities. Every attempt to bind them to a pattern laid out in advance has failed — and ought to have failed. That lesson is written in large letters over universities. We must set them free to develop their environment in whatever way may best suit their existing needs; they have paid much too high a price for architectural conformities. The most advanced techniques of planning and construction are as appropriate to a university as they are to garages, department stores and the buildings of the United Nations.

What then becomes of the *grand composition* — of that wide and general pattern which might express in plastic terms the unity and direction, the social attitude and content, of a university? What becomes of form in universities?

• • •

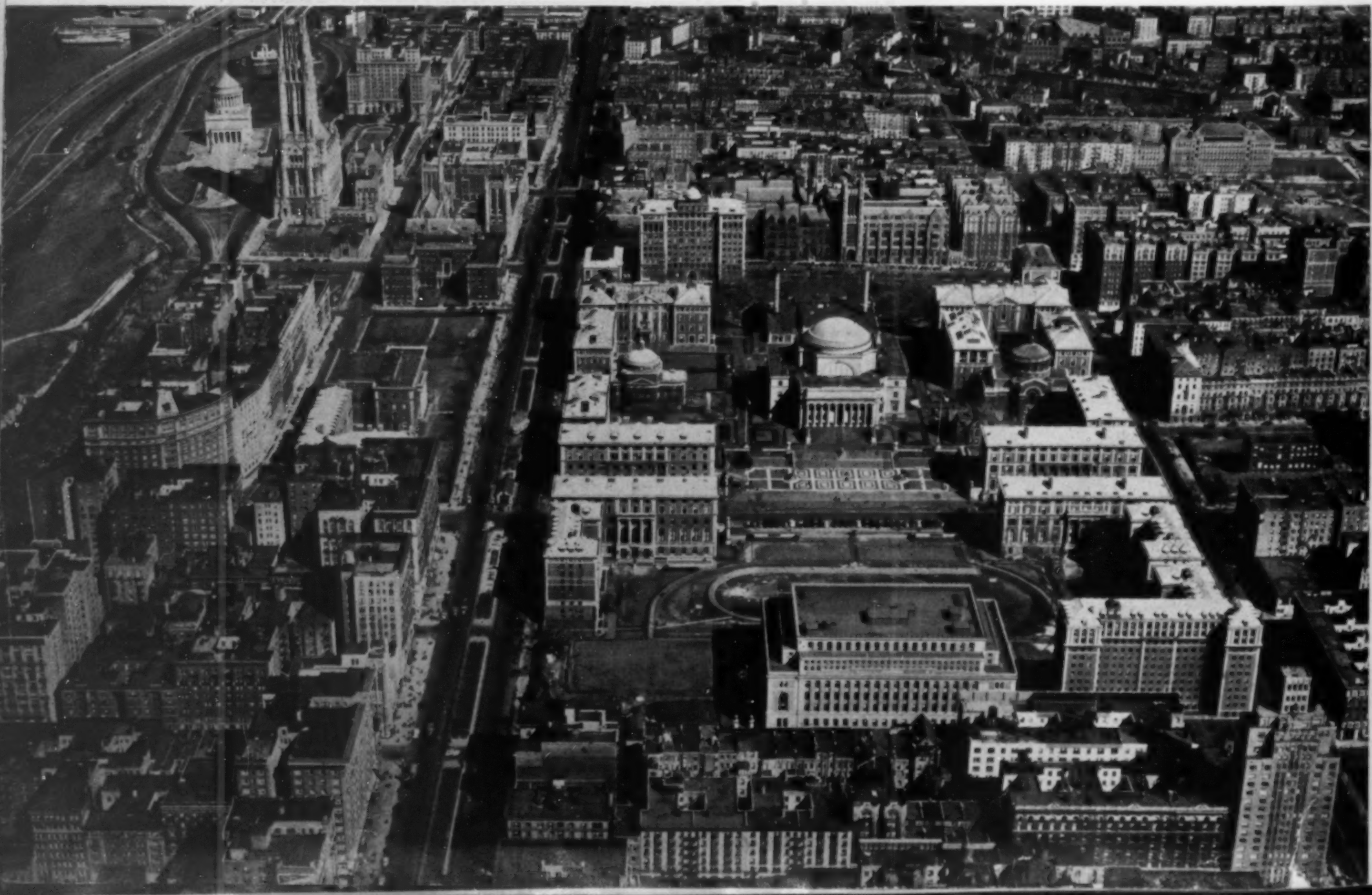
If my readers will now tolerate an academic interlude, I should like to review some of the premises which, it seems to me, underlie this problem of form. Afterwards I shall note some procedures in planning which these suggest.

First. In our time form in buildings is rarely eloquent when it is distinct from techniques of construction or from the purpose to which buildings are addressed. That is because our era is saturated with technological thought: because we have made of our world one vast machine and are at every moment aware of its structure and its pulsations. We cannot apprehend the form of anything that is made except with reference to the way it is put together and the way it works. The power of form to enhance the quality of our lives must rest upon its identity with that life: upon its identity therefore with organism and function.

That which is true of buildings is true of groups of buildings whenever, as in a university, these are united by the invisible threads of purpose and use. Not alone the individual buildings — library, dormitory, laboratory — are to acknowledge in mass and plane the task which they have to perform, the methods by which they have to perform, the methods by which they were built.

COLUMBIA UNIVERSITY. *"The impact of events upon such a patterned world is shattering. If I had to choose, I should choose*

Fairchild Aerial Surveys Photo



but these must also be clearly revealed in the pattern of the university as a whole.

I think that most of us are persuaded of this functional basis of form. We see clearly that theories of esthetics, stylistic uniformities and sentimental associations are less trustworthy guides in our search for form than are those adaptations to service and techniques which anchor our buildings in a reality which, however harsh, is ever present and known.

We must accept this principle; but it does not include all that can be said about form. Form in buildings is idea made visible. Form is the medium through which those meanings which we have discovered in buildings can be apprehended by those who look at them; not apprehended merely but made active and persuasive in their consciousness. At least one source of form is faith: faith in the worthwhileness of human nature, in the dignity of man's enterprise. Form may be an accident; form may be logical consequence; but form is more often a philosophy.

People who build universities usually believe in them. Their need for form will not be satisfied by convenience in operation merely or by the perception of organic truth but by the way in which the university idea is given definition and eloquence.

What then is wrong with the architecture of Columbia and Princeton? Is it merely that their buildings fail to exhibit contemporary techniques in planning and construction? I could forgive them that failure, considering the time and circumstances which surrounded them, if only they had been fitted to the living idea which they contain. They are not in truth fitted to any idea. They are self-sufficient moulds into which ideas are poured.

In the arsenals of architecture there are many such moulds, beautiful grooves each waiting for its idea. Architects sometimes go about searching for such ideas. The idea which fits perfectly is seldom found but it is possible to re-shape an idea — to leave out a part of it or graft upon it some adventitious material. There is something of Rome in Columbia, something of Oxford in Princeton, and if we ignore that which is contemporary in these institutions, if we disentangle from them that which is vital and in evolution, they will fall neatly into the brick and stone baskets waiting to receive them.

Ideas are creative things. They will not remain long within the confines of a formula. They are active to build, urgent to give vitality to that which is built.

Our task is to open a channel for these ideas which lift our art above the level of mere building and yet impress upon them the character of that practical purpose for which they were built.

Second. The task to be performed in university buildings and the methods by which they are built constantly change. Their nature tomorrow cannot be predicted. No *program* is possible which extends beyond a dozen years.

There are now enrolled in American universities about two and a half million students. The University of California has 27,000 students; Boston University, 20,000. Jefferson thought that a university might have enrolled 300.

How many among these two and a half million students are preparing for the learned professions, once the

PRINCETON. . . . "The planner can admit some accidents . . ." (Note basic similarity with "modern" work, pp. 73, 83 — Ed.)

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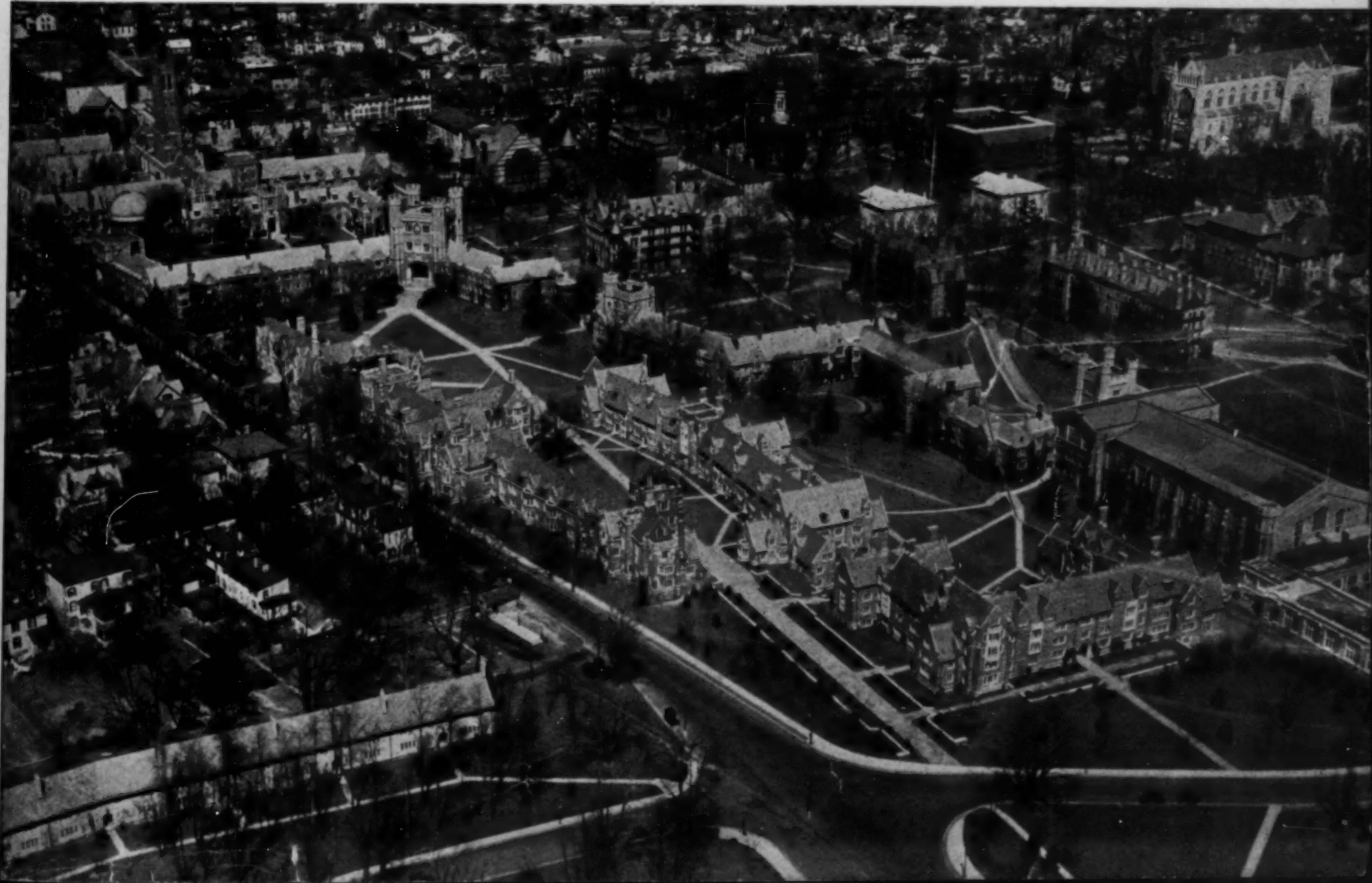
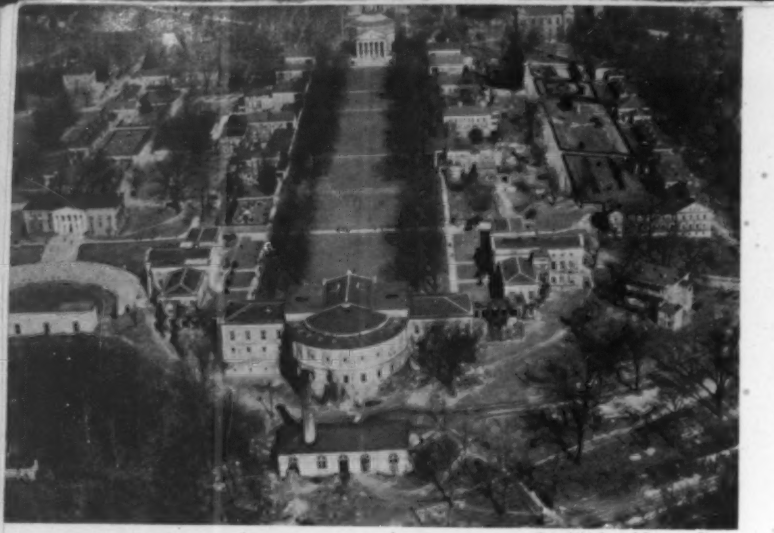




Fairchild Aerial Surveys Photo

WHAT HAPPENED TO UNIVERSITY OF VIRGINIA

"Serious impairment, altering the character of Jefferson's design more radically than do the acres of dull buildings . . ."

sole purpose of a university? And, by the way, *are* there any learned professions? What has become of that Christian sentiment which once filled the air of universities? of those aristocratic standards, now that the university is the instrument of democracy? of pure science in these vast training schools of medicine and engineering? of the humanities crushed under the weight of the social sciences?

No one can say what will be the task of tomorrow's university or what will be its new relationships to the society which nourishes and uses it; and no one can guess what new miracles of steel and glass, of magnesium and plastics, will compel new and unheard-of aspects in its structures.

That is one reason why I am not greatly distressed by the persistence of the historic styles. I know that this live creature will not be forever patient with these imprisonments.

Third, (a deduction from the first and second), no plans can be fitted to an unpredictable growth. Even the city planners have renounced crystal-gazing.

Accepting these premises as valid, what hope have we for form in universities?

Let's begin by conceiving form as a function of time. Let's imagine the university, as the city planners imagine the city, as a growing organism whose form lies partly in the past, partly in the future. Our university will never be completed. It will always be on its way.

If we make a master plan then, it must be in such general terms as will admit of new interpretations and unexpected development. We can take nothing for granted. Those facilities which have endured the longest may be the first to disappear. Who could have imagined, as late as 1900, a university without a chapel? The library grows like a volcano at the edge of Italy — but who knows how soon the library function (such is the language of sociology) will become an attribute of the state? And what university can continue to bear the cost of empirical research in competition with the DuPont de Nemours Company and the Atomic Energy Commission?

If we make drawings, we must project upon them only the facilities for such activities as are now taking place — or about to take place. Reserve plenty of ground for development; provide for the expansion of buildings — and their contraction; and when in doubt make free use of temporary construction. Let no building depend for its character upon its relation to another, nor let any of the open spaces be of such absolute proportions that new constructions built into them will destroy them.

Beyond these principles I think that there might be general groupings of related facilities. It would not be risking too much to assume that administration will be near the center of the site and that if there is a dining hall it should be accessible from the kitchen.

All this is less art than common sense; but I have noticed that time, which willy-nilly is thus the chief architect of universities, which brings into being their functions and the shapes and groupings of their buildings, is also the chief ingredient in their characters. There is a continuing element in universities, a becoming and unfolding, which is often clearly revealed in their forms, even when those lack all style and architectural grace. Old universities are always more beautiful than new, not merely because they are romantic, and not because the art of architecture has suffered a decay, but because they have a history. Like an invisible chain, history surrounds, unites and illumines.

Sometimes I think that the many styles of architecture which plague our campus have done us at least this service: they set forth in dramatic form the sequences of temper and incident which have shaped the life they decorate. It has happened that the road to unity — of feeling, rather than design — lies more often through the styles than through a style. There are secret understandings among buildings as among men.

It is said that in the 1890's a rich and eccentric gentleman offered Harvard a million-dollar building on condition that it should be in the Turkish style. When asked "Why Turkish?" he replied, "The Turkish is the only style not already in the Yard."

It is a pity we did not accept that offer. Turkish would have faithfully represented our soul at the end of the century. As it is, there is an important bangle lacking in our bracelet of souvenirs.

The civic center at Venice is a good example of the way in which a quality of life may give unity to buildings diverse in character — I am glad that the architects of Venice were not "consistently Byzantine" — and even in so monstrous a mound as Johns Hopkins University one may discover the thread of circumstance which, once it is understood, gives absolution, in part at least, for the decalog of architectural sins committed there. There is something at Venice which has escaped the notice of Johns Hopkins University, but the two have this in common: both are events, not monuments.

This is not said in defense of the styles. The styles illustrate the role of time in group planning; this complexity and dissonance, this decomposing of grand compositions witnesses the malice of time; and we have seen also how time can deal generously with university buildings. Perhaps we should take time into our partnership.

Let's look once more at our universities. Was it their changing course alone — their unexpected growth, their lack of foresight, their new services and ambitions — which created these vast dishevelments? These are indeed fundamental causes; but there is another cause almost as determinant. Architecture also has changed its course, not once but a dozen times within a century. The universities are, in a sense, our victims. We exercised upon them an unstable and inconsistent art. These confusions are our confusions.

Perhaps then we ought to begin by putting our own house in order. We must give some consistency to our practice, and to our art a vitality which can survive at least one generation. If we had possessed and held a tradition, the buildings which we built for universities would, however changing in purpose, scale and techniques, yet have followed each other in a harmonious progression. In architecture tradition only is the master-planner.

Must I explain that I do not mean a style — conformities in motif and ornament and techniques of organization? I mean a principle of form, known and firmly held among architects and a practice which, although evolving and hospitable to idea and invention, is yet steadfast in its general direction. I mean a basic understanding and consistency, a clear notion of the purpose of architecture, a definite standard of attainment. I would have individuality but not the negation of all authority. I would leave room for an occasional rebel, but not a rebellion every Tuesday. I would admit advertisement, but not an art which is one big, buzzing advertisement. I would have a religion, but not the incessant multiplication of strange gods.

I sometimes think that all of Nineteenth-Century architecture — and the greater part of Twentieth-Century — can be interpreted as a search for such a tradition: an obstinate questioning and experiment of which the strange costumes of university buildings are consequence and clear witness. The Gothic Revival was the bravest, as it was the most mistaken, of these essays in dialectic and stone. Neo-classicism was only half doctrine; half hope for a renaissance. The rediscovery of the Colonial was an answer to a prayer more naïve but not less sincere. And those architects who built upon new theories and those who sought out new inventions were equally inspired by visions of a new and universal architecture, as were also those who put their faith in genius and those who were confident of genius in themselves.

Perhaps then a future historian will find in this pursuit and adventure still another stream of unity in the forms of our universities. I should be somewhat disingenuous if I reminded universities that they are creators no less than guardians of traditions.

Fairchild Aerial Surveys Photo

WHAT HAPPENED TO GIRARD COLLEGE

A part view, showing the charming effect that can occur by accidental juxtapositions through historical chance

To return now to the design of Mr. Mies van der Rohe for the new buildings of the Illinois Institute of Technology.

It seems to me that those who invented the International Style (unfortunate phrase) were also concerned with this search for a tradition. They sought the principles of a new architecture in contemporary techniques of planning and construction. They did not intend that the work they did should itself represent a new style — new formulae of motif and procedure — but rather that the ideas thus set forth might form a basis from which a new progress might be possible. Le Corbusier called his book not *Architecture* but *Vers une Architecture;* and if his work, and the work of those who were addressed by similar means to similar ends, cleared our buildings of some of that load of romance, ancient techniques, speculative esthetics, and cant with which we had burdened them, that was not in order that these buildings should achieve "stripped and stark asceticism, rigid and dogmatic," but that our architecture might be set free upon a new foundation.

If our younger architects give the International Style an ever-widening range and a deeper human content, that is no reproach for those who initiated that movement, for that is precisely what was intended. Variety and individuality, lyrical beauty and grandeur, wit and fantasy are not alien to a mode of building which is consistent with our genuine culture; and Mr. Mies van der Rohe has shown us that such a mode of building may attain also a serene elegance.

Perhaps then this pattern for the Illinois Institute will, after all, resist the battering of new styles and unexpected events. It may be that Mr. Mies van der Rohe may escape that Gothic raid. Perhaps there is here a guidepost to that new tradition which shall at long last deliver our universities from the vagaries of architecture. This stone is well and truly laid.

WHERE UNEXPECTED EVENTS ARE EXPECTED

MASSACHUSETTS INSTITUTE OF TECHNOLOGY'S FRESH APPROACH TO PLANNING

Below: M.I.T.'s "palace of science"; across-page, her general plan

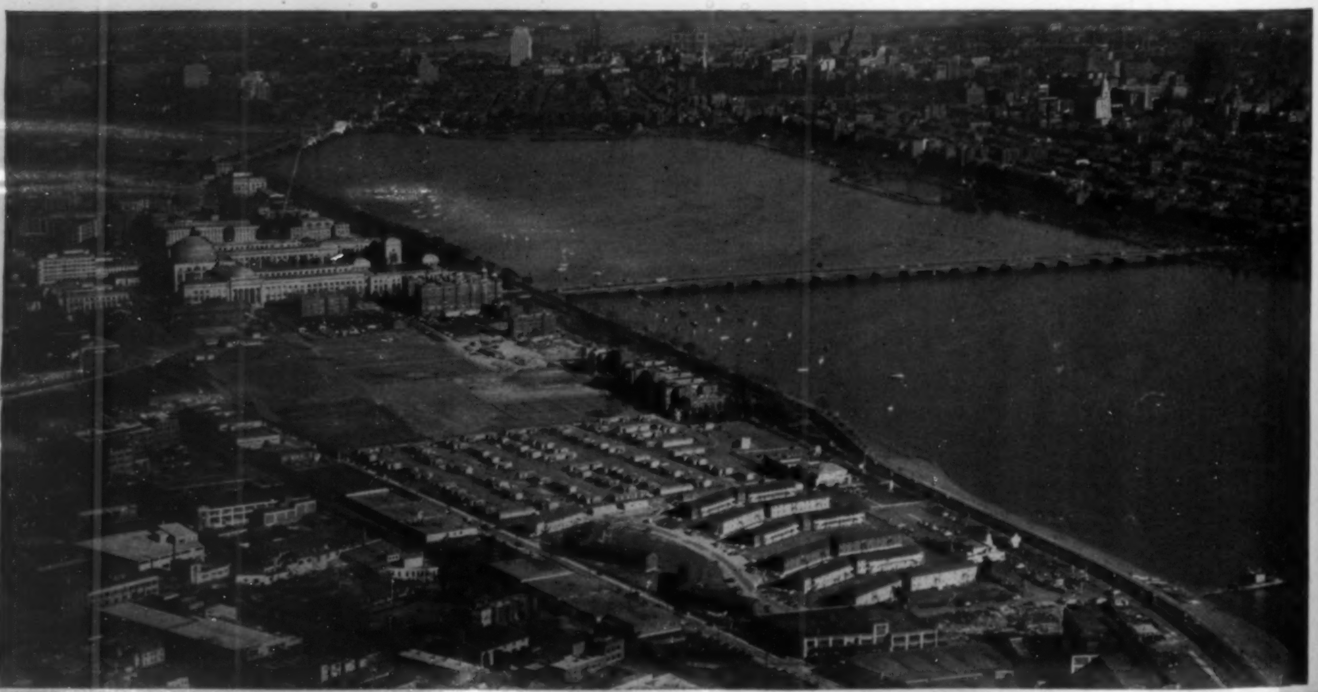
BETWEEN the new plans of Massachusetts Institute of Technology and her existing palace there is a difference of approach that should be highly instructive for all college and university programs.

The classical phalanxes on the Charles River have too long been discussed merely as a rather smashing example of a "grand composition." Their other aspect, almost universally missed, is that, back in 1913, they were conceived as a pace-setting building group, up to the minute technically and in function. For the first time in academic work the designers employed standard "unit construction;" measured needs by square feet and not literary description; employed non-bearing partitions for easy change, and a "corridor" plan for easy expansibility. The record is a bit deflationary for those who think that the language of functionalism was invented yesterday. Strip the classic garment, cant the lines a little, punch gaps at the angles, and it is stock "contemporary."

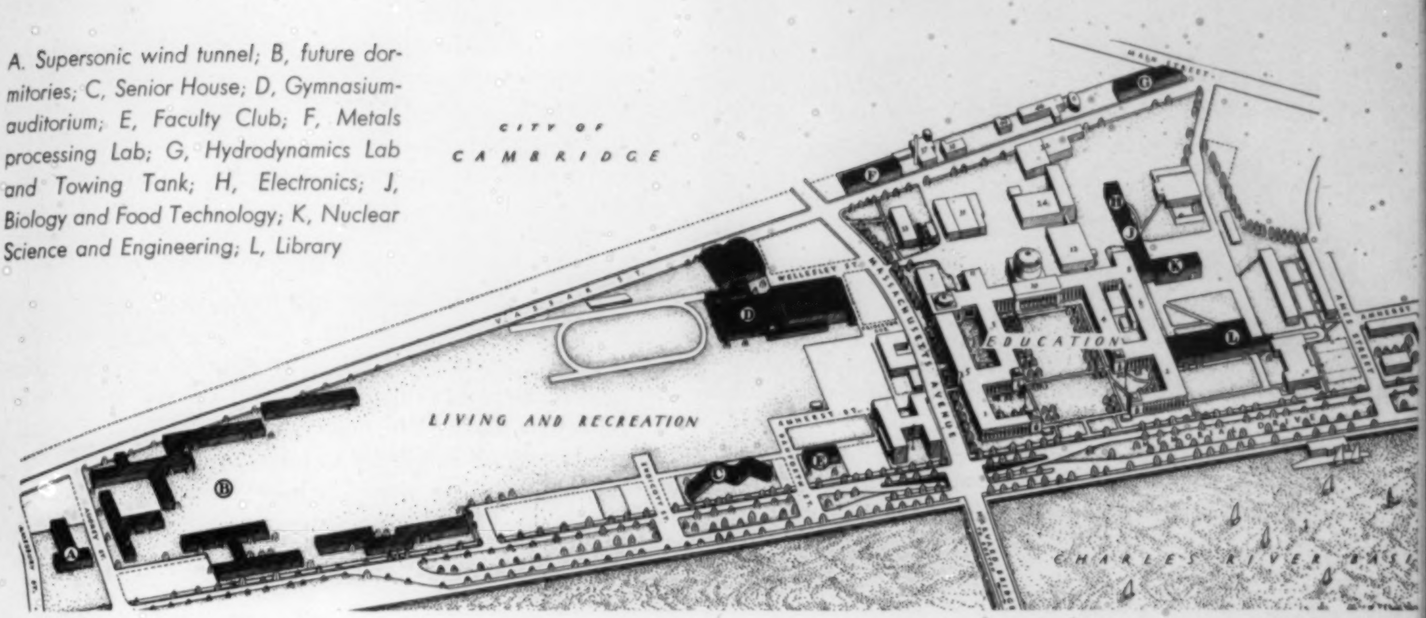
The significance of the palace therefore is that it convincingly applied a unified (and traditional) garment to a unified functional scheme. M.I.T. was the last great American university to achieve this. When Yale clothed her quadrangles in doublets in the Twenties the younger generation was already smiling.

M.I.T.'s later experience seems to invalidate for her future use *both* the idea of the classical garment *and* the idea of the unified scheme for a master plan. This emerges clearly from a brief survey of her present situation.

Superficially, M.I.T.'s expansion differs from that of most universities in seeking not an increased enrollment but vastly more instrumentation *per student.* This demand parallels the course of the industrial age which the school nourishes. M.I.T.'s chosen assignment is to train top leaders. Before the latest war she enrolled an average of 3100 students. The number is now 5600. Permanent



A. Supersonic wind tunnel; B, future dormitories; C, Senior House; D, Gymnasium-auditorium; E, Faculty Club; F, Metals processing Lab; G, Hydrodynamics Lab and Towing Tank; H, Electronics; J, Biology and Food Technology; K, Nuclear Science and Engineering; L, Library



plans envisage 4000 to 4500. Mass training must be left to a different kind of institution.

M.I.T.'s academic needs revolve about highly specialized buildings, mostly shops and laboratories. She built some important ones during the war. Since then she has enlarged the Sloan Laboratories dealing with motors and gas turbines. She has under construction a supersonic wind tunnel. Plans are complete for a hydrodynamic laboratory and naval towing tank, and a new metals processing laboratory. A new research center is being developed for study of cosmic rays. Other expansion definitely projected deals with nuclear science, electronics, biology, and food technology, not to mention the library.

In most of these instances the "architectural" control over basic form is small. Engineering calls the tune. Architecture and planning endeavor to keep it harmonious and expressive.

A common characteristic in many of the new units is their demand for a new, almost interplanetary, scale of separation. No longer can technological departments all co-exist across a court or across a street. The wind tunnel is at the far end of the new residential campus. The cosmic ray center is at Lexington, putting 15 miles between its delicate measuring instruments and the disturbances caused by an electronics lab capable of generating charges in the range of 20,000,000 volts. Such developments cannot be neatly "master planned" by accepted techniques. They are explosive.

So too is the acceleration in speed of work. Sites had to be chosen during the war for major units, permanent in nature, within less than a single week. This might be considered cataclysmic: but nowhere is there a guarantee that such "cataclysm" will be exceptional. It must be part of the expected procedure.

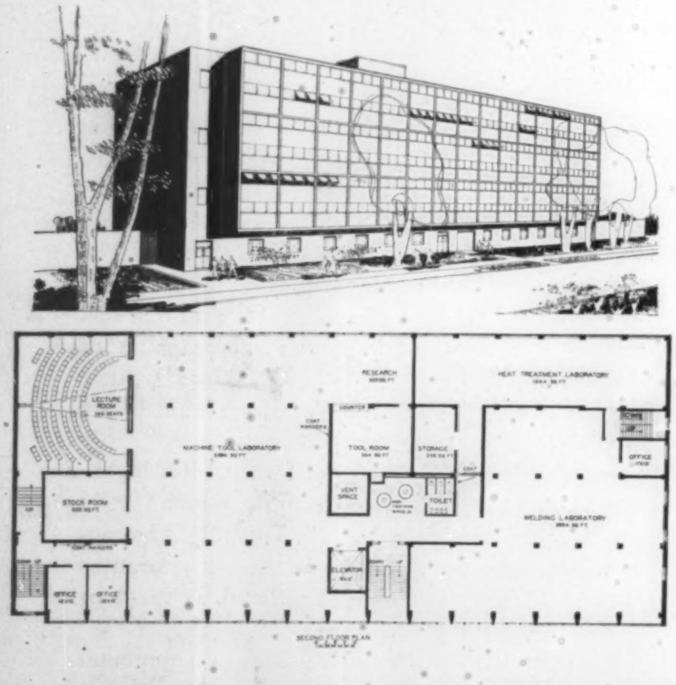
M.I.T. shares with other universities a compound

Left, across-page: M.I.T. on the Charles; temporary student housing in foreground. Below, "temporaries" designed by Robert Kennedy, of the School of Architecture and Planning staff; right, swimming pool (pre-war) by Anderson and Beckwith

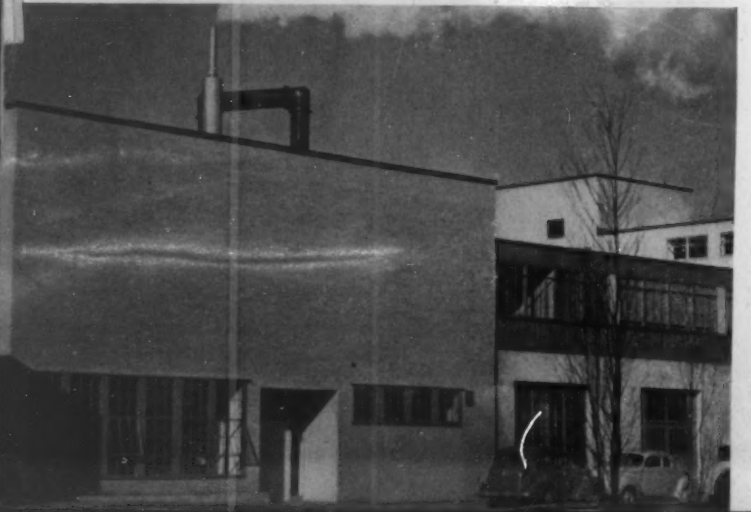
D. Shaw Photo

D. Shaw Photo

Above, Radiation Laboratory, built during the war from plans by faculty members L. B. Anderson and H. L. Beckwith (Building numbered 31 on general plan on previous page)



Above, projected Metals Processing Laboratory, designed by Perry, Shaw and Hepburn, scheduled for immediate construction. Below, part of the Sloan Laboratory for Motors and Gas Turbines, recently completed from plans by Anderson and Beckwith, to be published in a future issue of ARCHITECTURAL RECORD



problem of student and faculty housing and recreation, not to mention parking. Here the requirements would seem to be less volatile, except that M.I.T.'s experimental temper has left her very little satisfied with current stock solutions as a basis for settled planning. The student population comes from 46 foreign nations and all 48 states. M.I.T. intends not only to secure the ensuing vast benefits of intellectual association but to study actual preferences and proficiences in different ways of living. The first step was to set up excellently planned temporary dwellings for married veterans. The next is the highly experimental and original senior dormitory by Alvar Aalto, now under construction, of which the RECORD is privileged to release the first plans to be published. Later steps include carefully considered faculty housing, a new field house and gymnasium, an attempt at a comprehensive solution for parking — perhaps involving multi-story open parking garages.

Such a program is obviously just as volatile and provisional in detail as it is comprehensive in nature. M.I.T.'s greatest contribution in the field may be her *planning method* devised to meet this "chaotic" situation.

The first significant step is *utilization of the university's own planning resources.* Realizing that he has on his own staff some of the keenest educational and architectural planners in the country, President Compton has gathered them on an Advisory Committee on the Development of Building and Grounds, chairmaned by W. W. Wurster, Dean of the School of Architecture and Planning. (In most American universities it is customary for the head of the school of architecture to learn of his own institution's building program from the newspapers.)

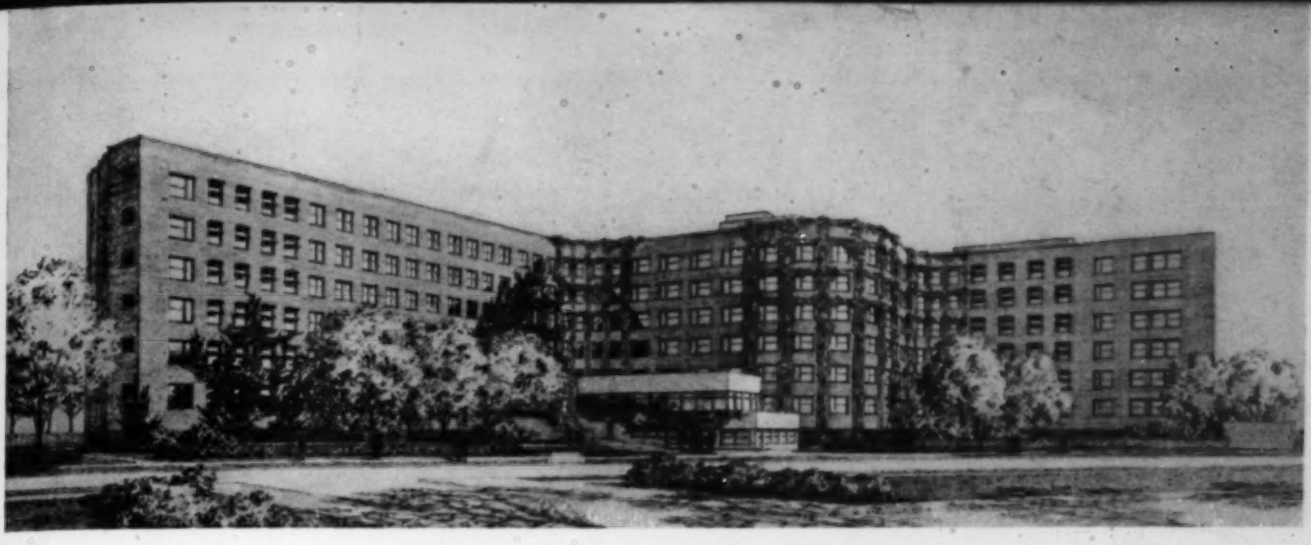
The next is the commissioning from time to time, as advised by this committee, of *specific plan studies.* Even the students have helped on these, and seen their ideas adopted.

The third is *assignment of actual buildings* not to a single architectural firm but to a number of them. A part, but far from all, of the actual design has been done by faculty members. This not only secures continuity and intimate knowledge in planning but prestige to the education which is offered through these men by the university.

The result is a type of university growth that is neither hamstrung in form nor resigned to the haphazard. Dean Wurster describes it as a "sort of controlled chaos." It is the conflux of many needs, many minds, many emergencies, but under continuous intelligent guidance.

In the United States, technical schools have been the chief generators of change in university architecture. Their problems are more realistic: they deal more with fate and are less amenable to fiat than the liberal arts colleges.

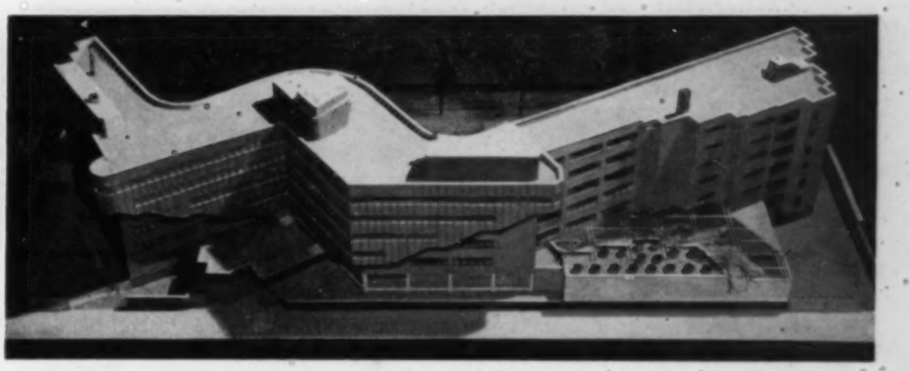
Because the approach of M.I.T., though no less humanistic, stands in such contrast to the inherited habits of most liberal arts colleges, the RECORD will explore the subject farther in a later issue.



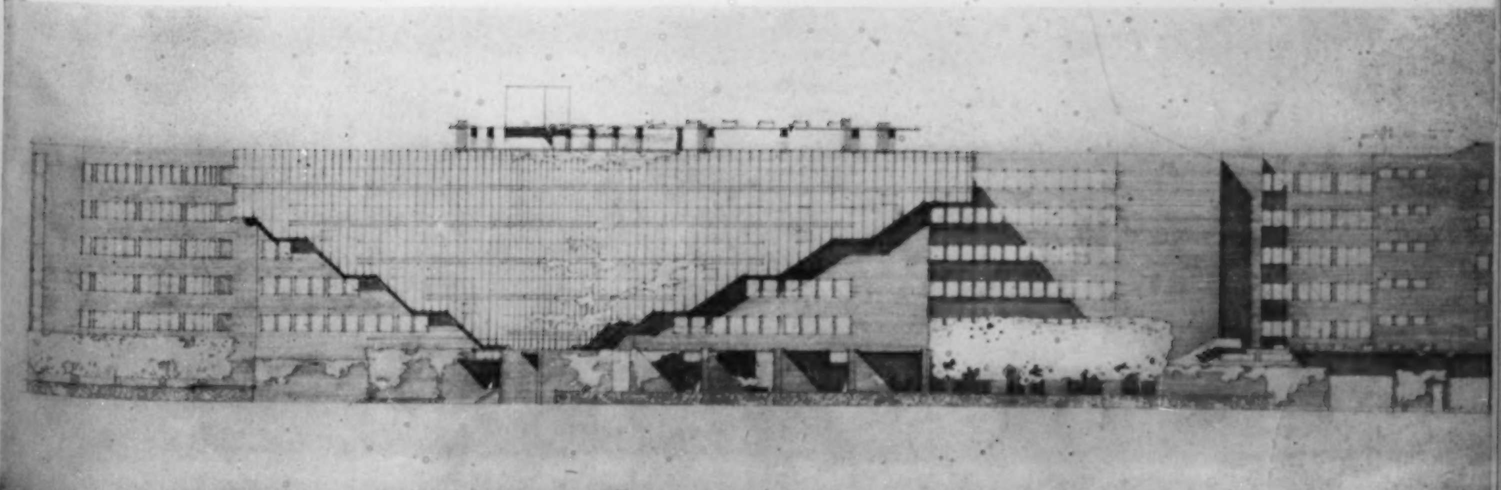
A DORMITORY THAT EXPLORES NEW IDEAS OF STUDENT LIFE

M.I.T. Senior House — Alvar Aalto, Architect; Perry, Shaw and Hepburn, Associated

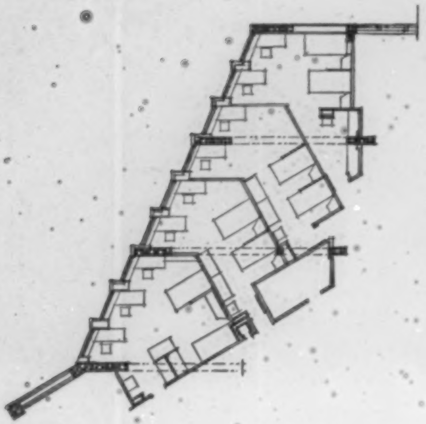
The striking form results from the play of many-sided imagination upon a many-sided analysis. What is the one best way for college men to live? Nobody knows. Probably there is no one best way. Some singly, some in pairs, some in big rooms, others in small; some noisily, others in quiet. Aalto has imagined most of the students approaching sociably together; splitting off in groups and dispersing as they mount the spreading stairs



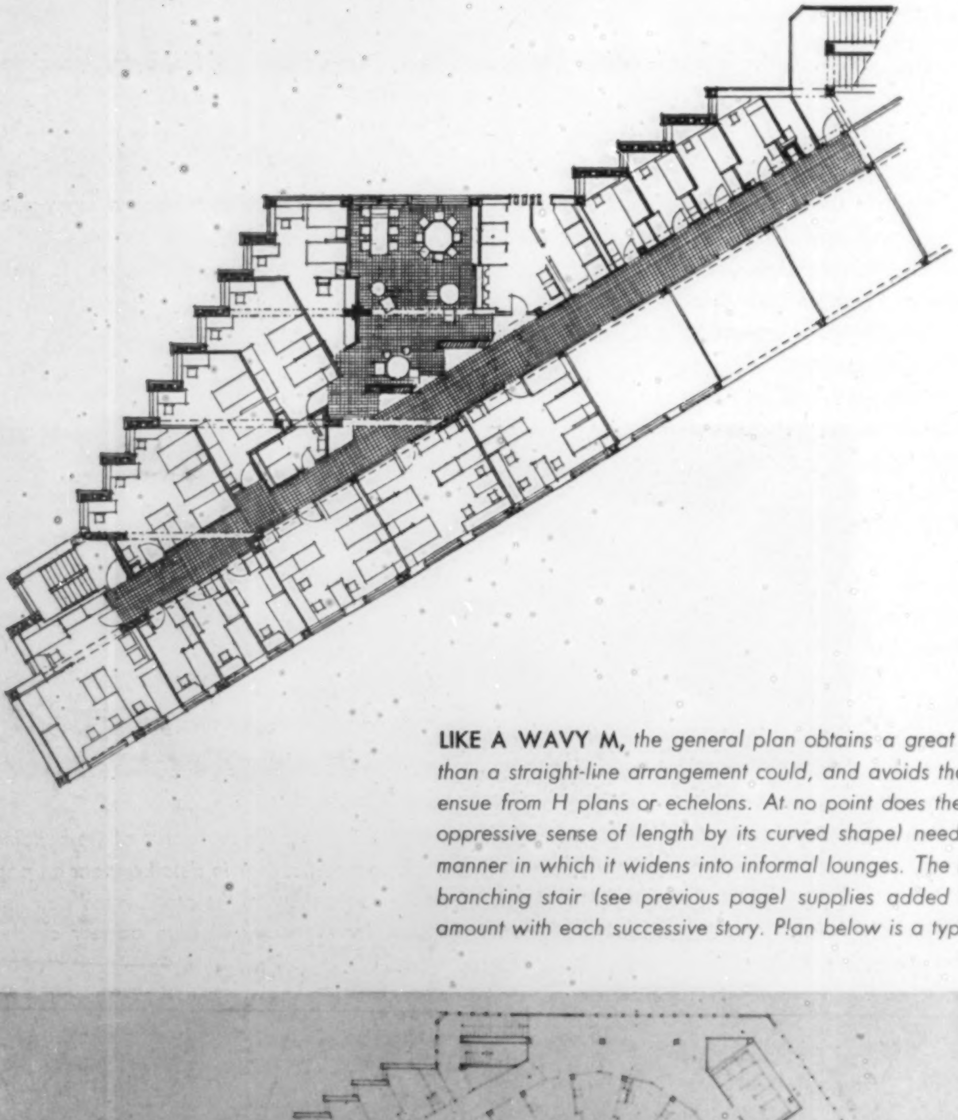
Perspective, top of page (drawn by Ralph Rapson) shows the south side of the building, facing the Charles across Memorial Drive. (Some modifications in detail appear on page 99.) Elevation (bottom of this page) is from the north, showing the cantilevered stair hall. It is an earlier study than the model. Reasons for the wavy M plan appear overleaf



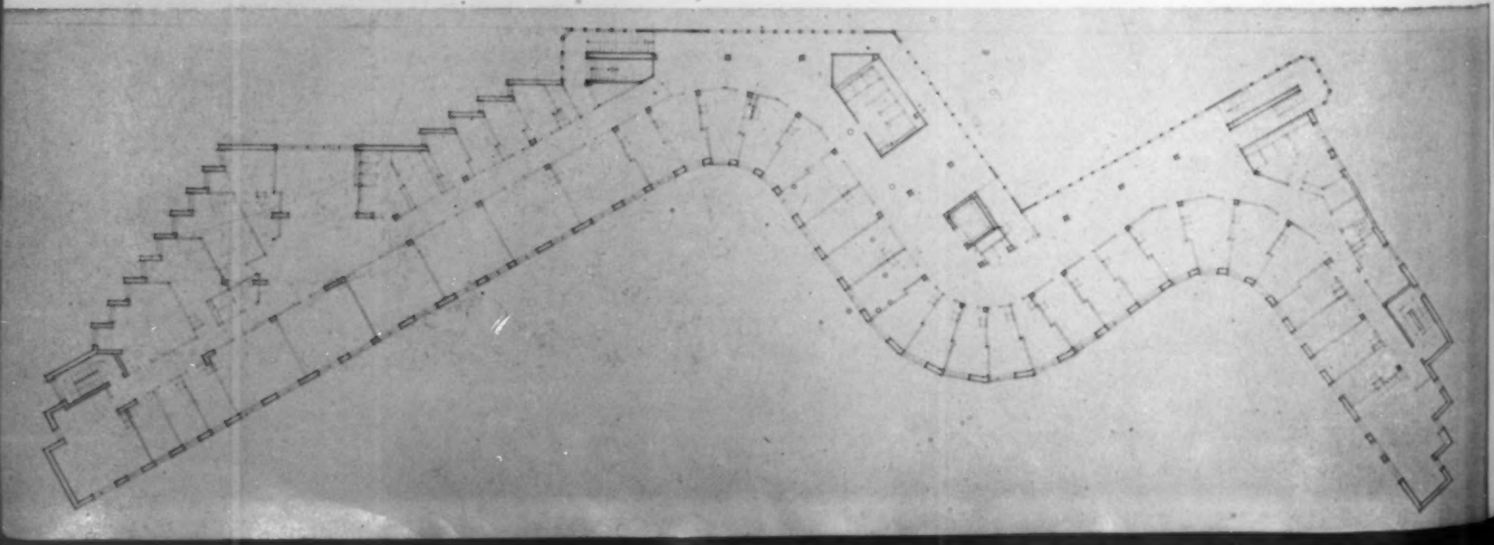
PLANS AND ELEVATIONS UNDER DEVELOPMENT

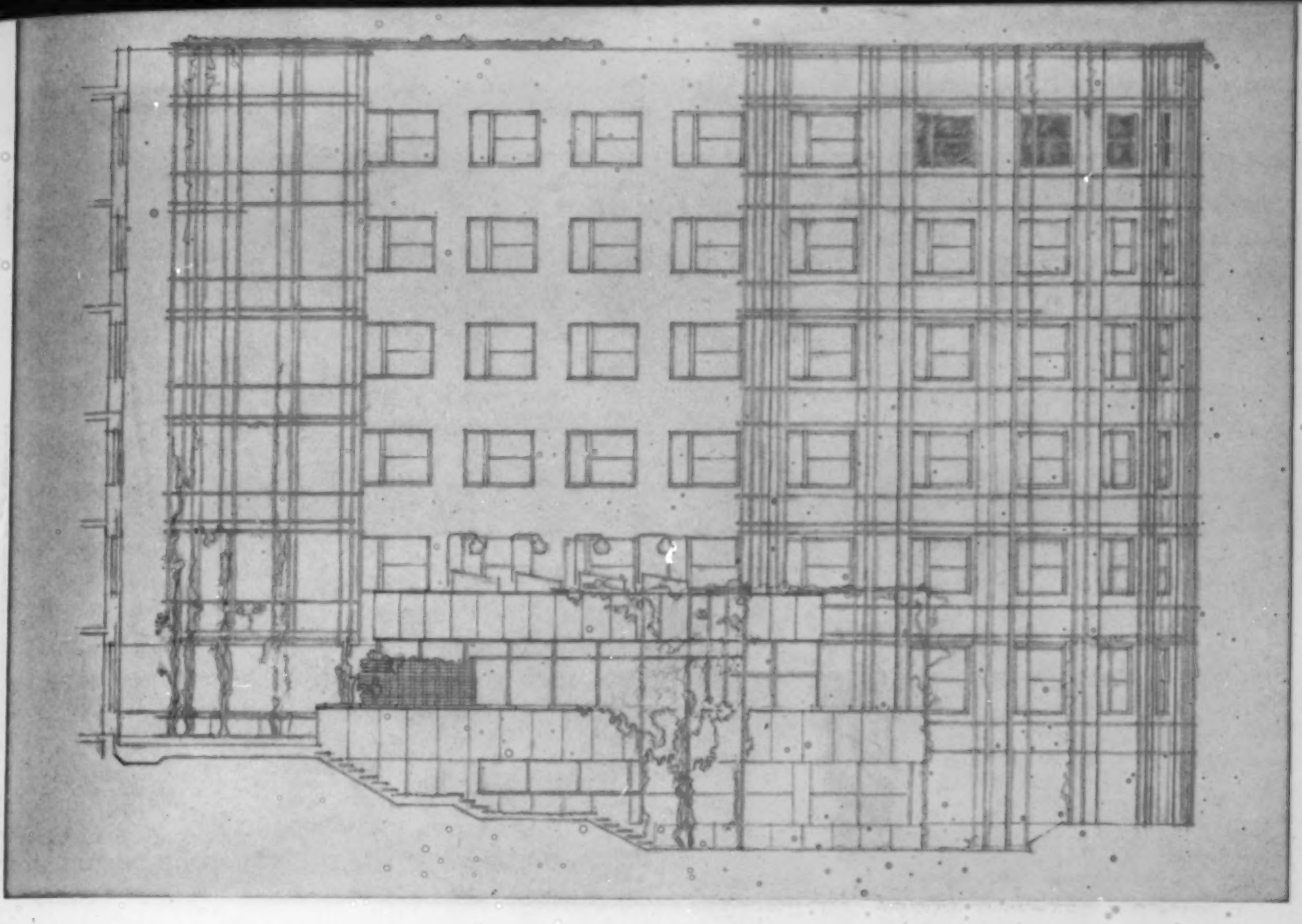


LIKE THE BRANCH OF A PINE TREE, *the plan thickens at the western end, sending off extra twigs. Though there are no rooms facing north, efficiency of land use is the same as if there were. Note great variety of living arrangement and the good interiors. The smaller drawing is a later modification, giving a greater effect of interior space, while preserving the alcove-like privacy and fine daylighting of the desks*



LIKE A WAVY M, *the general plan obtains a great many more rooms on the same lot than a straight-line arrangement could, and avoids the second-class quarters that would ensue from H plans or echelons. At no point does the corridor (which is saved from an oppressive sense of length by its curved shape) need light other than it obtains by the manner in which it widens into informal lounges. The highly original cantilevering of the branching stair (see previous page) supplies added lounge space, which increases in amount with each successive story. Plan below is a typical upper floor*





LIKE A VINE-COVERED ROCK, *the southern face of the building (seen in the part elevation above) will be cooled in summer by planting to climb on trellis. This is to be made of aluminum pipe, which in itself will form an interesting pattern when the vines are bare. Trellis is confined to portions of the building which face south.*

The part-elevation below is taken at the entrance, in the re-entrant angle of the building seen in the model (page 97). The pattern of squares is to be executed in a rough-faced surfacing material, contrasting with the rough-faced brick of the building. Balustrades are to be of marble

"When you stand by a river and look," asked Alvar Aalto of his students, "which way do you stand? Do you stand square in front?"

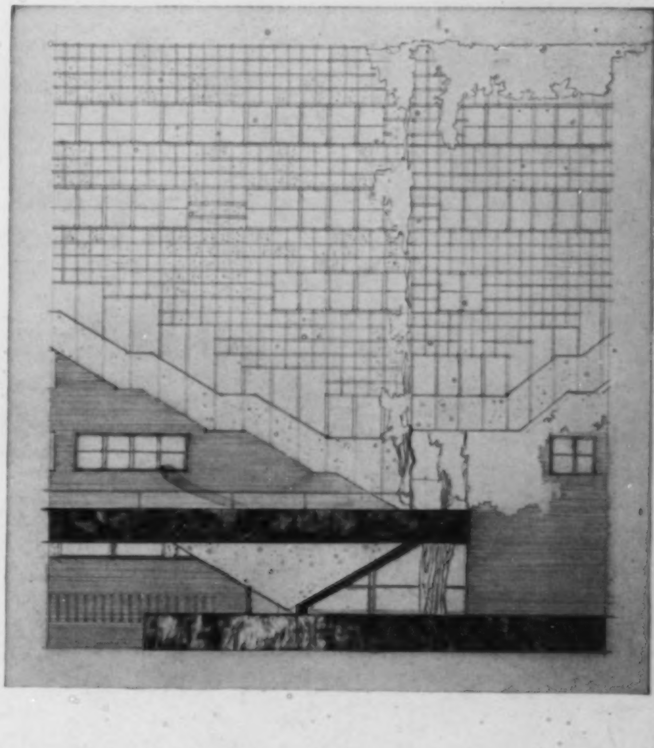
"No," replied the students, "we look upstream or down."

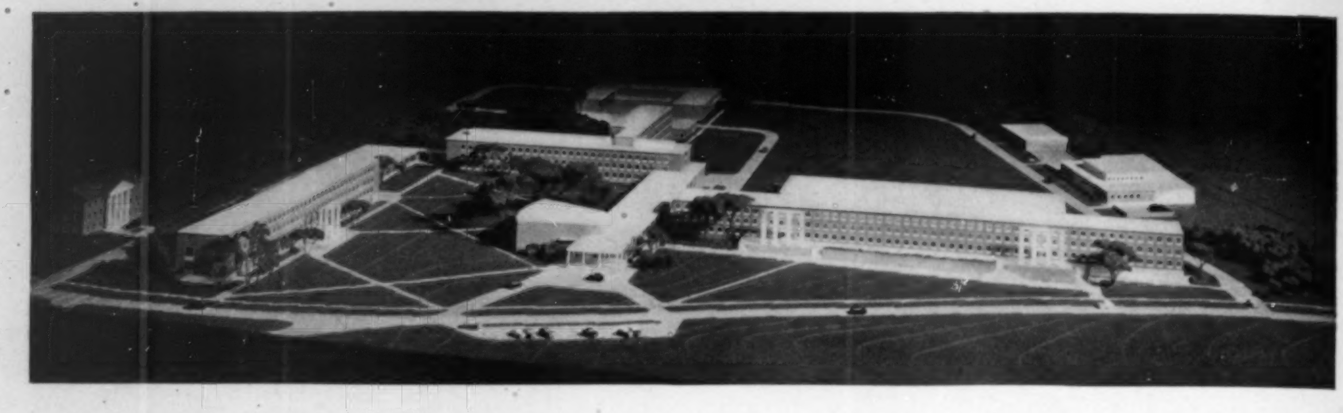
"So," said Aalto, "we shall do that in our building. The rooms will look upstream or down."

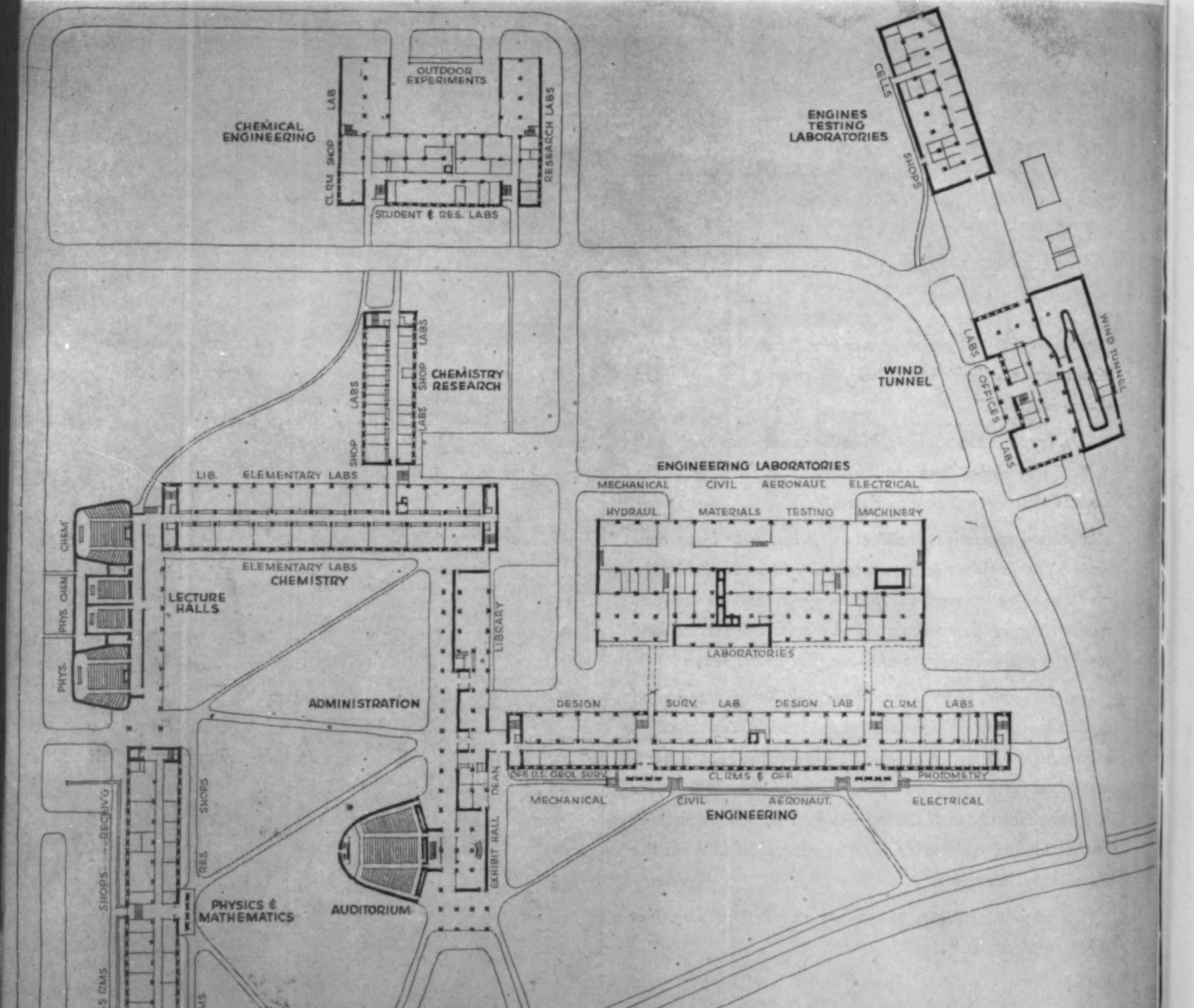
In great imaginative architecture it has ever been convenient that impulses of human amenity fit so well with the results of objective analysis. The same plan that lets you look up the river or down conforms also with statistics of land coverage and percentages of value. The charts prove it.

And yet Aalto, an avid reader of Mark Twain, has warned against the perils of high-hearted navigation. Capable himself, as the event has proved, of adding to the plan accommodations for no less than sixty students after foundations had been already well started—and all without damage—he has looked up quickly from a perusal of Life on the Mississippi to remark,

"Let no young pilot try to manage a curved building. That is for the old hands."






OUTDOOR EXPERIMENTS
CHEMICAL ENGINEERING
LAB
SHOP
CL.RM.
RESEARCH LABS
STUDENT & RES. LABS
ENGINES TESTING LABORATORIES
CELLS
SHOPS
LABS
SHOP
LABS
CHEMISTRY RESEARCH
SHOP
LABS
WIND TUNNEL
LABS
OFFICES
LABS
WIND TUNNEL
LIB.
ELEMENTARY LABS
ENGINEERING LABORATORIES
MECHANICAL
CIVIL
AERONAUT.
ELECTRICAL
HYDRAUL.
MATERIALS
TESTING
MACHINERY
CHEM.
PHYS. CHEM.
PHYS.
LECTURE HALLS
ELEMENTARY LABS
CHEMISTRY
LIBRARY
LABORATORIES
ADMINISTRATION
DESIGN
SURV.
LAB
DESIGN
LAB
CL.RM.
LABS
OFF. U.S. GEOL. SURV.
CL.RMS & OFF.
PHOTOMETRY
DEAN
MECHANICAL
CIVIL
AERONAUT.
ELECTRICAL
ENGINEERING
SHOPS
RECEIVING
SHOPS
RES.
PHYSICS & MATHEMATICS
AUDITORIUM
EXHIBIT HALL
CLASS RMS
CL. RMS
0
50
100
200

NEW ENGINEERING SCHOOL FOR MARYLAND UNIVERSITY

GLENN L. MARTIN COLLEGE OF ENGINEERING AND AERONAUTICAL SCIENCES

University of Maryland, College Park, Md.

Skidmore, Owings and Merrill, Architects

In adding the Glenn L. Martin College of Engineering to the University of Maryland, the architects enjoyed a more clean-cut assignment than would be the case if they were merely expanding an existing plant. Both physically and contextually the engineering school will be an adjunct facility. This does not mean, of course, that the architects were free to ignore the university campus and its buildings, but it does mean they could assume virtually complete freedom to dispose the new buildings and integrate them naturally.

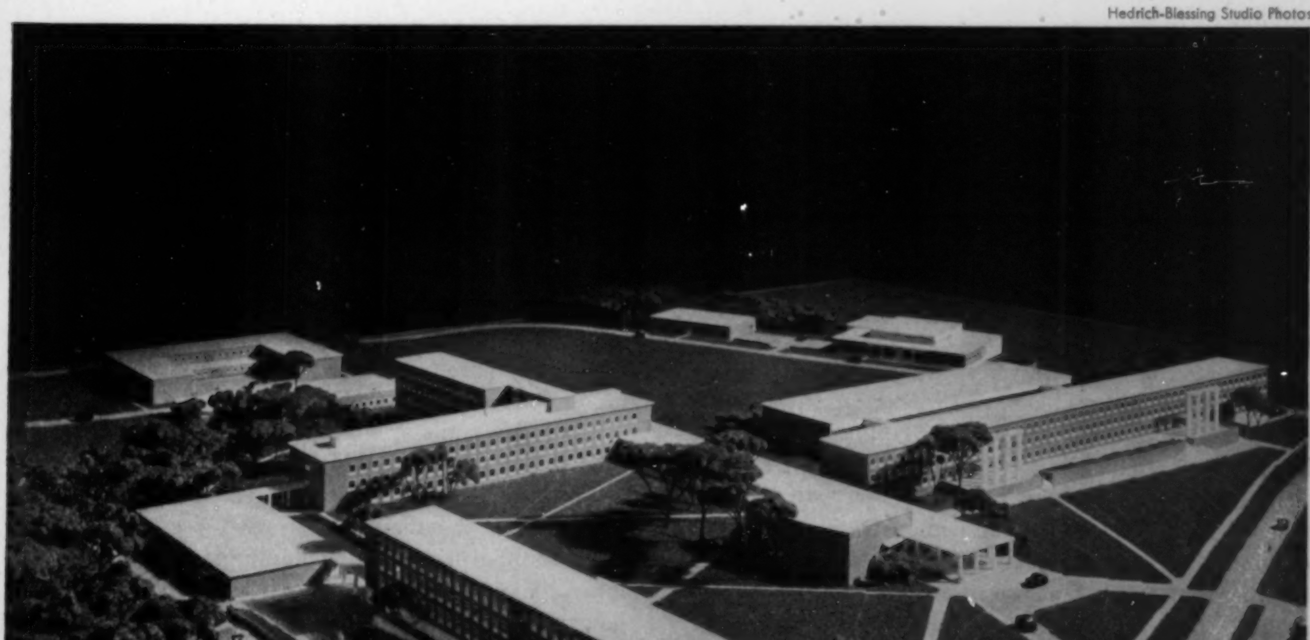
The College of Engineering has been planned to accommodate initially 1000 engineering students, with provision for eventual 100 per cent expansion. The site is a wooded area, roughly triangular, fronting on the university's drill field and touching its main campus only at one corner. While this situation focused the traffic flow largely at one corner of the triangle, it gave the engineering school a very favorable aspect.

From a planning standpoint, perhaps the focus of interest is the combination of Engineering Building and Engineering Laboratories. Four related engineering departments — Mechanical, Civil, Aeronautical and Electrical — are housed together in the two buildings. The longer, taller one contains offices, classrooms, and design and drafting rooms, plus smaller laboratories. The other groups the large laboratories for the four departments, has a 48-ft. crane for heavy test apparatus extending its full length of 360 ft.

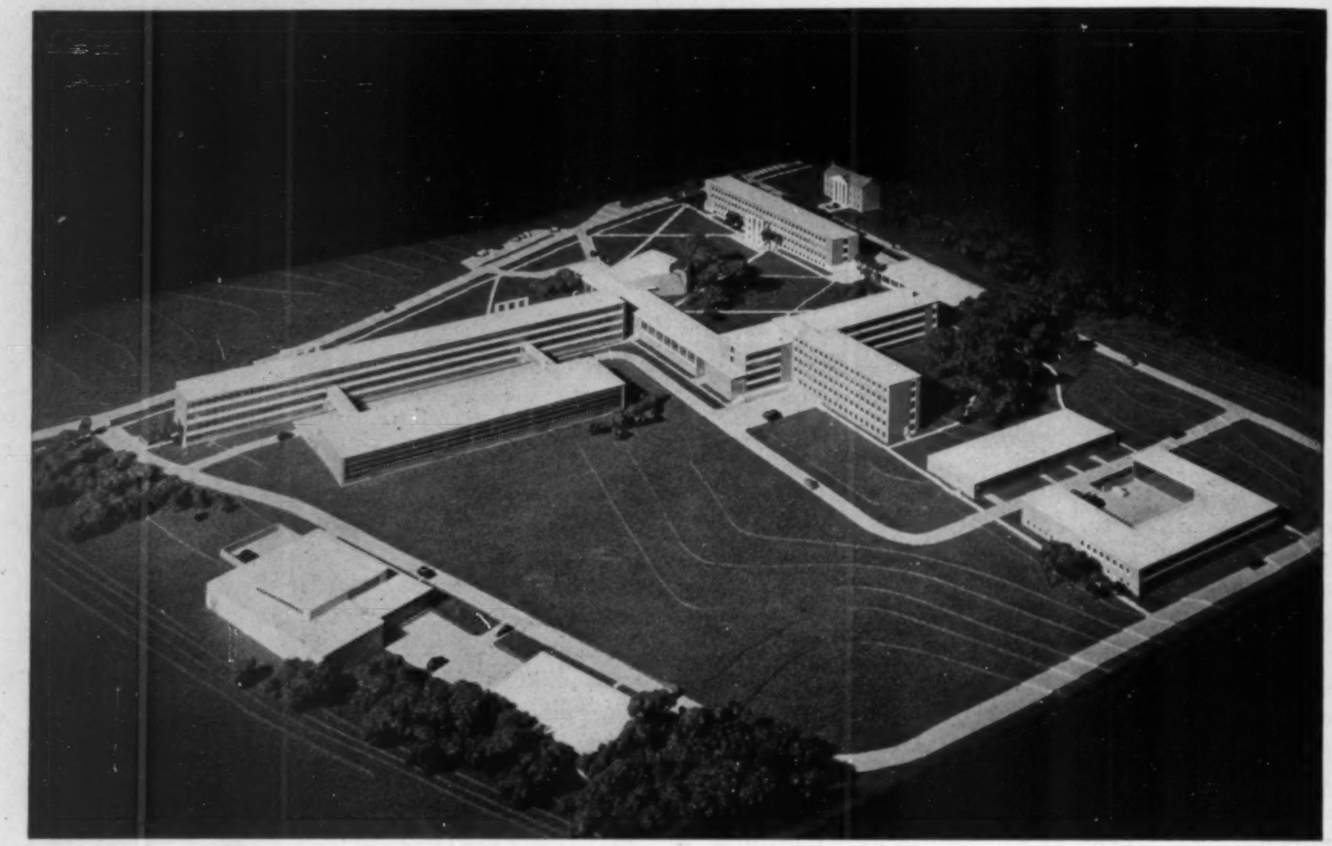
Something of the mutations that eventually produced this grouping can be read in the sketch plans on page 104 showing various stages in the concept of this group, beginning with a separate unit for each department. An H-shaped building with a laboratory core was considered more than once, but did not really block a fairly consistent progress toward the final solution.

Obviously the more complete integration is highly

Hedrich-Blessing Studio Photos



Upper corner of model (in view below) points toward main campus of University of Maryland, buildings are disposed with this corner as a focal point. Those around the court house the more academic sciences most closely associated with the university; engineering sciences farther removed



functional; it also contributes the precious asset of extreme flexibility. The jet-propelled speed of technology today fairly screams for flexibility, not only in laboratories but also in office and classroom facilities.

Buildings for studies more closely associated with the rest of the university are grouped in the area closest to the main campus — Physics and Mathematics, Chemistry and the lecture halls for the two. In logical relationship with the Chemistry Building are the buildings for Chemical Engineering and Chemistry Research, these to the north, farther from the main traffic corner.

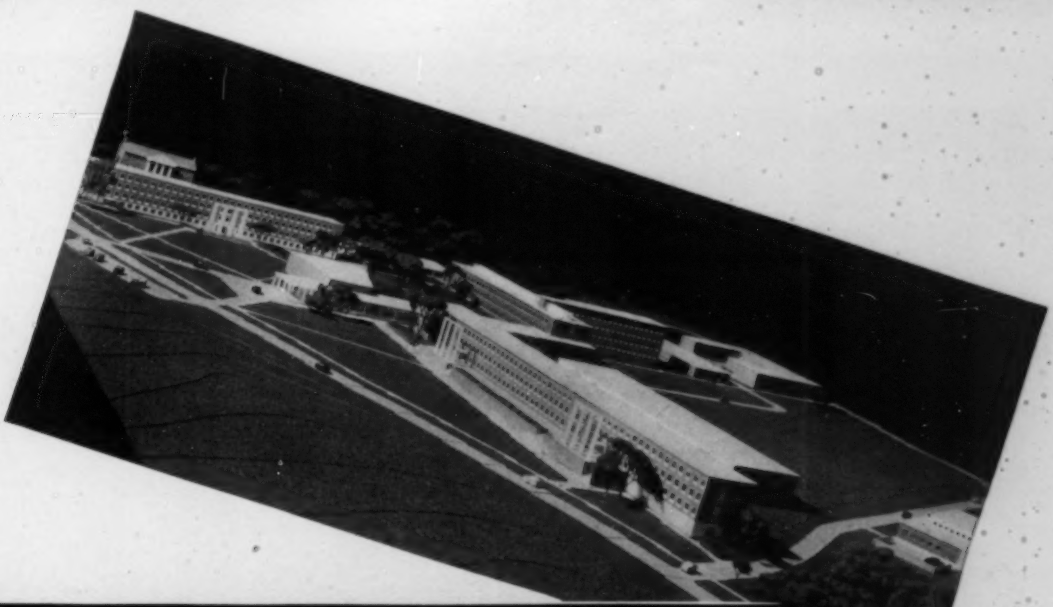
Connected to both physics and chemistry departments are four lecture halls, two with a capacity of 325, and two accommodating 100 students, these larger halls being difficult to handle in classroom buildings. Preparation and equipment rooms are also concentrated in this scheme. Projection booths and demonstration tables are provided in all. These auditoria will also be available to other departments of the university, also to outside groups.

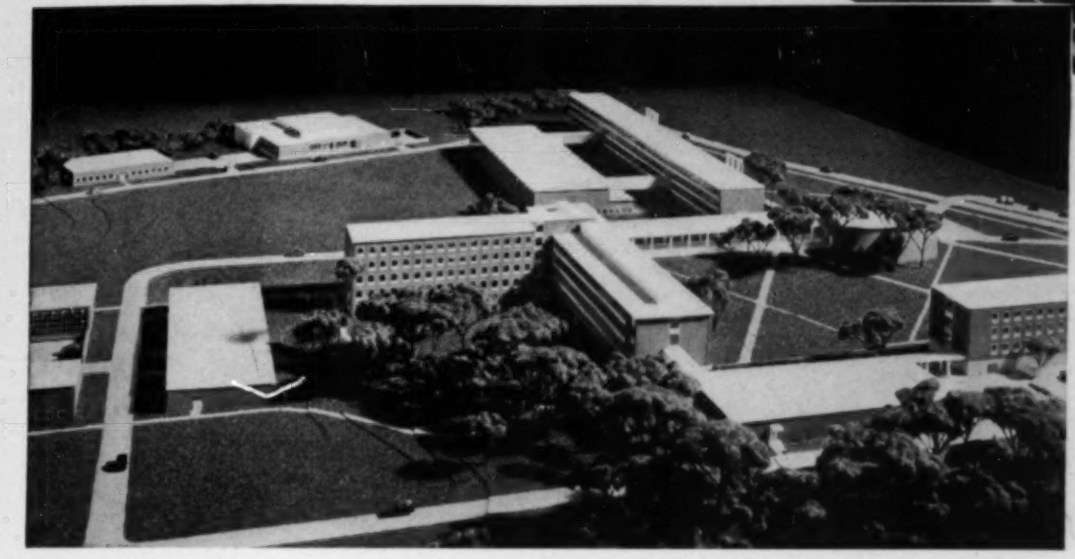
At the far side of the plot plan are placed the Wind Tunnel and Engines Laboratories, because of the highly specialized nature of these facilities and the amount of noise they will produce. Also they will be adjacent to a future airfield.

In the middle distance are the auditorium, exhibit hall, library, and administration offices. These start, at the south, with a visitors' motor entrance, leading to a covered walk serving this whole group. Thus auditorium and exhibit hall are accessible to special concentrations of traffic, and visiting dignitaries would be well received in the dean's suite.

The central library is designed on the Baltimore Plan, with reading room on the first floor and a stairway leading directly down into the stacks on the ground floor. Along inside walls on both floors are study carrels and a limited number of cubicles for persons using typewriters. There are also decentralized departmental libraries in other buildings.

The traffic principle of planning is used throughout individual buildings, except where it runs counter to laboratory requirements. In other words, while the natural tendency is to focus heavy traffic rooms — classroom concentrations, for example — on lower floors, it is





frequently found that the special needs of the labs dictate lower-floor locations, particularly where material storage and handling become important. In general, however, traffic problems still can be served: elementary laboratories get the nearer locations, advanced ones in the farther reaches.

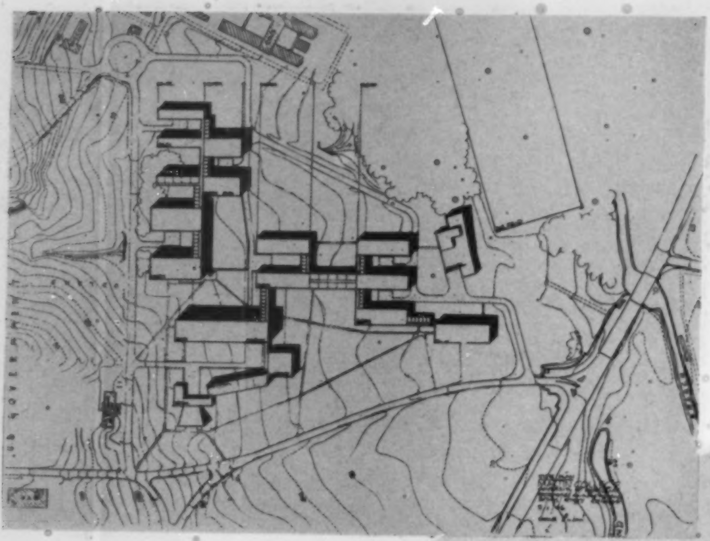
Flexibility also is heavily stressed in the planning of individual buildings. While the risk of fire around laboratories necessitated some separation of activities into wings and floors, in general the effort was to group similar activities close together in large buildings where layouts need not be frozen. Partitions are independent of structure, and can easily be moved. Service facilities — in chemistry buildings, for example — are grouped in vertical shafts lining corridor walls, and space for horizontal runs in corridor ceilings, with access panels, allows for utilities at any point in both academic and research wings.

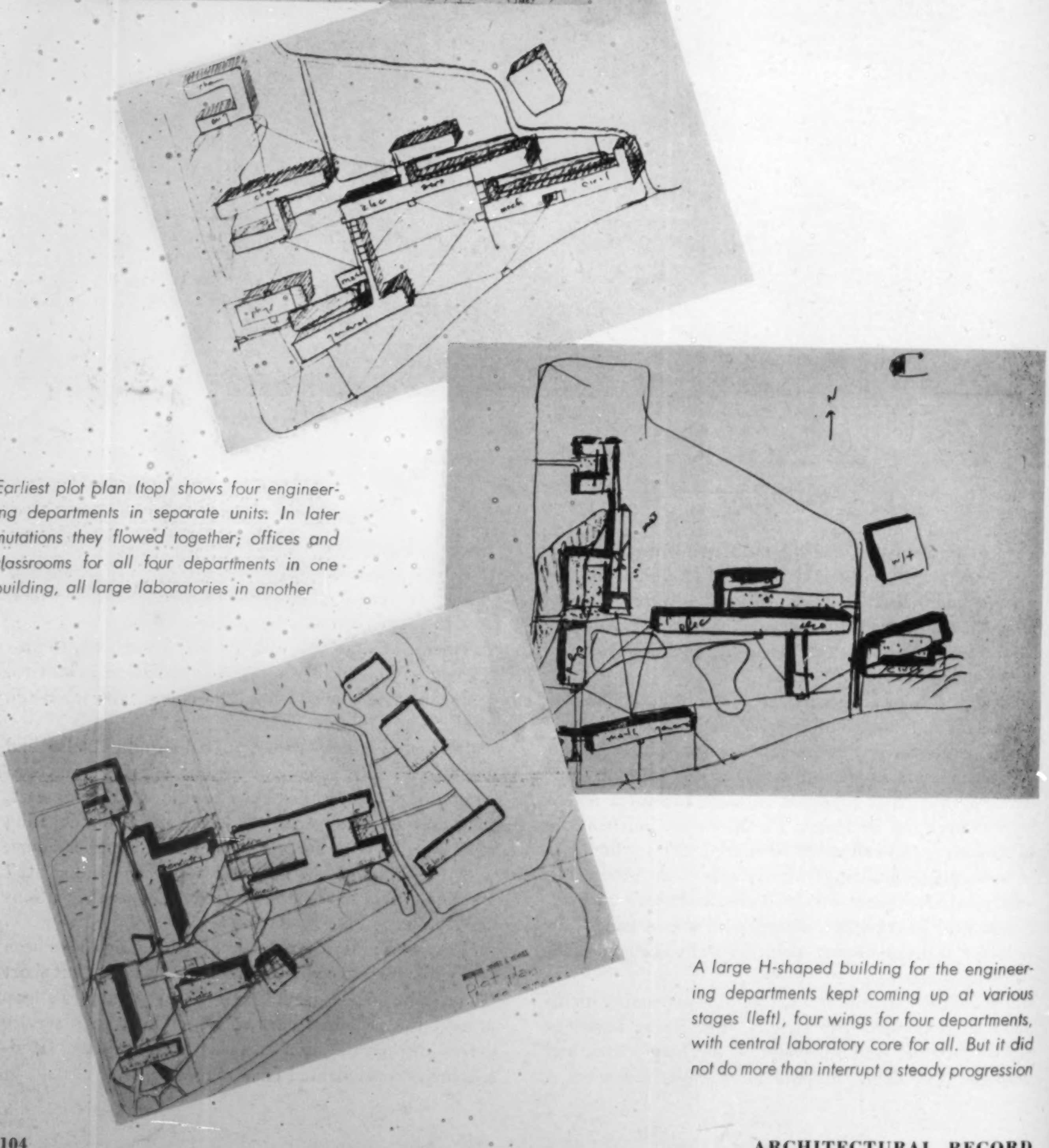
Flexibility was important, too, in construction methods and materials. The strictly engineering buildings will be of steel frame because of the long spans, and because steel offers support for various lab set-ups. Other buildings will have reinforced concrete framing. All buildings have been designed on the loft principle, with widely spaced columns, beams and slabs upon which movable partitions may be placed at will.

Projected metal sash will be used throughout, to provide protection from rain when ventilation is still required. Special shades will afford shade even when the windows are fully opened.

Incidentally, the consideration of sunlight also had much to do with placing of various activity areas. Undergraduate laboratories have been located facing east, since they are used principally in the afternoon. Drafting rooms are situated for north light on the upper floors, with large classrooms adjacent. Then associated staff and administration offices naturally take south locations across the corridors.

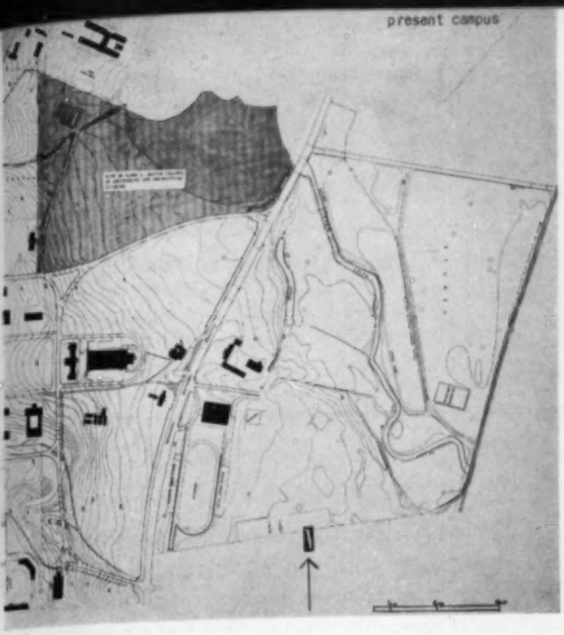
Walkways and paths between the buildings have been freely designed to connect sources of traffic so that short cuts will be unnecessary. The service road makes a loop around the principal part of the college, with service drives and parking areas serving each building. Landscaping is concentrated for strong accents.

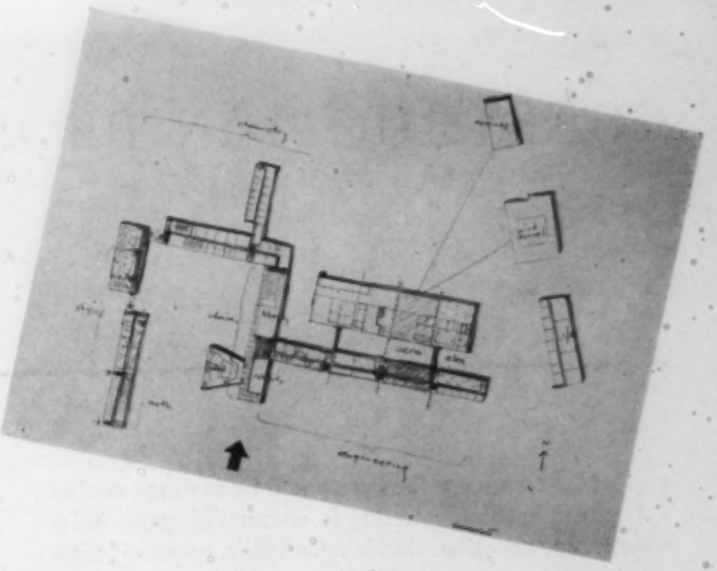




Earliest plot plan (top) shows four engineering departments in separate units. In later mutations they flowed together; offices and classrooms for all four departments in one building, all large laboratories in another

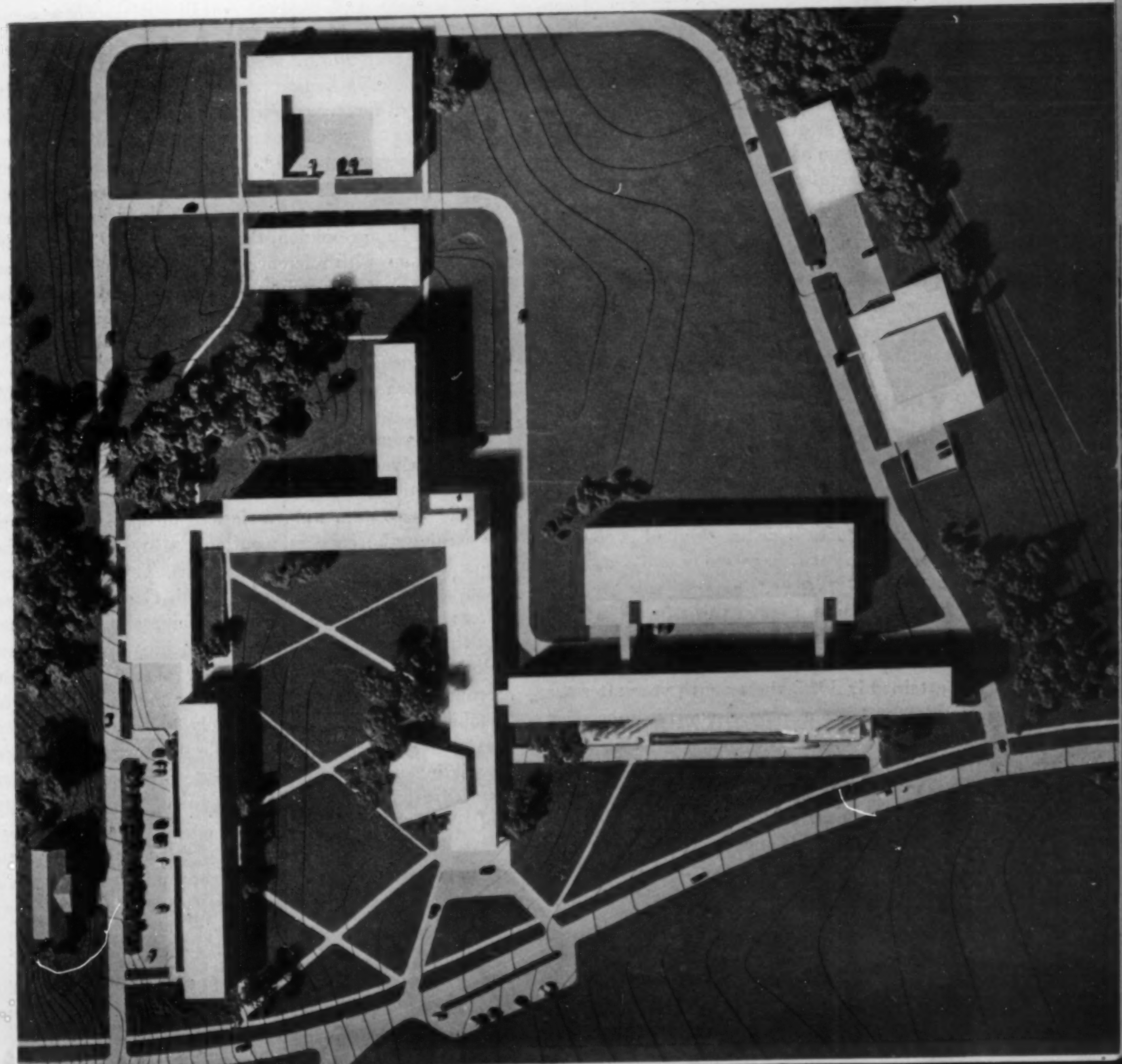
A large H-shaped building for the engineering departments kept coming up at various stages (left), four wings for four departments, with central laboratory core for all. But it did not do more than interrupt a steady progression





Site for the engineering college (shaded area above) has its principal connection with the main campus at the lower corner. Principal buildings will be seen from the highway across an open area, a drill field

One of the later sketches in the plot plan series (above) shows the engineering departments now fully integrated in the two buildings. With a little more shuffling, buildings settled down as in the model



CONSTRUCTION PROSPECT FOR 1948

By Thomas S. Holden
President, F. W. Dodge Corporation
and Clyde Shute
Assistant Vice President and Manager, Statistical and Research Division

DOMINANT factor to be considered in any appraisal of future economic trends is commodity price inflation. In construction, this is reflected in relatively high construction costs.

There was hope, in the spring of 1947, that a reasonable degree of stabilization of commodity prices and construction costs had been reached. After about three months of moderately declining commodity prices and moderate improvement in construction industry productivity, the upward trend was resumed. The period of apparently stabilizing prices and construction costs was a period of moderate slowdown in volume of contract letting. It was a slowdown for purposes of correcting, in some degree, an unbalanced market situation.

Apparently, the fact that the extent of price and construction cost declines was moderate was taken by prospective investors, builders and home owners to signify that a new level of prices and costs had been reached, below which no early and substantial declines were to be expected. This is, we believe, a proper explanation of the motivating force back of the recent upturn in volume of construction starts. However, a secondary factor of considerable importance was the removal, on July 1, of practically all remaining governmental restrictions on nonresidential construction and on rental housing.

Construction progress in 1947 has been reflected more in the attainment of approximately normal completion records, rather than in large increases of new starts. According to the estimates of the U. S. Bureau of Labor Statistics, housing completions in 1946 represented about 56 per cent of the number of starts made in that year. In the full year 1947, completions will represent 90 to 95 per cent of starts. This has resulted in completion in 1947 of nearly twice as many units as were completed in 1946.

It is of interest to note that in this, the second full year after cessation of hostilities, housing production reached 85 to 90 per cent of previous peak production, which was attained in 1925, the seventh year after the end of World War I. As a comparison, it is interesting to point out that production of passenger automobiles this year will reach 75 to 80 per cent of the previous peak.

Recent increases in construction contracts and starts have again strained available supplies of key materials and available construction manpower. The trend of commodity prices, including prices of construction materials, is still upward. Further wage increases are rather likely. The economy as a whole is straining with the effort of full production to meet backlogs of accumulated needs of practically every kind. We have practically full employment, which makes recruitment of additional manpower for the construction industry and marked improvement in construction productivity very difficult.

Most construction materials should be plentiful in 1948. For many of them competitive selling and competitive pricing will be in order. However, many key materials will continue to be in tight supply. This condition is particularly likely to prevail with respect to many fabricated metal products.

Since every upward step in prices and costs tends to price some construction projects out of the market, the prospect of further construction cost increases must be counted as a factor tending to retard large construction volume increases in 1948. The prospect of tight supply of many components of building and engineering structures also warns that conservative volume estimates are in order. In our opinion, these factors will be the determining ones with reference to 1948 volume rather than the still enormous volume of accumulated needs. The present situation combines the characteristics of expanded activity to meet expanded needs with the characteristics of an inflationary boom.

In order to appraise current inflationary trends, F. W. Dodge Corporation recently conducted a survey of leading economists of the country. One hundred replies were received from economists in industry, commercial organizations, financial institutions and universities. While there were wide variations of opinion expressed regarding the economic outlook, there seemed to be something like a general consensus. This general consensus may be briefly summarized. Commodity prices were expected by a majority to increase until sometime in the spring of 1948 and after reaching a peak to turn downward during the remainder of the year. These economists expected wholesale commodity prices to stabilize at a level approximately 70 per cent over the average for the year 1939. While there was a very wide variation as to the expected date of commodity price stabilization, the median time indicated was the spring of 1949.

A majority of the economists polled expected a business recession in 1948, but of those who expect such a recession a considerable majority characterized it as

ESTIMATED CONTRACT VOLUME—MILLIONS OF DOLLARS

37 EASTERN STATES

	* Estimate Year 1947	Estimate Year 1948	Percentage Change
Commercial buildings	780	850	+ 9
Manufacturing buildings	900	775	− 14
Educational and science buildings	400	500	+ 25
Hospital and institutional buildings	165	280	+ 70
Public buildings	70	90	+ 29
Religious buildings	110	130	+ 8
Social and recreational buildings	110	150	+ 36
Miscellaneous nonresidential buildings	90	90	0
TOTAL NONRESIDENTIAL BUILDINGS	2625	2865	+ 9
Apartment buildings, hotels and dormitories	875	1000	+ 14
One- and two-family houses	2235	2250	+ 1
Other shelter	20	20	0
TOTAL RESIDENTIAL BUILDINGS	3130	3270	+ 4
TOTAL BUILDING	5755	6135	+ 7
Public works and utilities	1770	1900	+ 7
TOTAL CONSTRUCTION	7525	8035	+ 7
Estimated dwelling units (37 states, basis of Dodge figures)	*388,000*	*400,000*	*+3*

** 9 Months Actual, 3 Months Estimated*

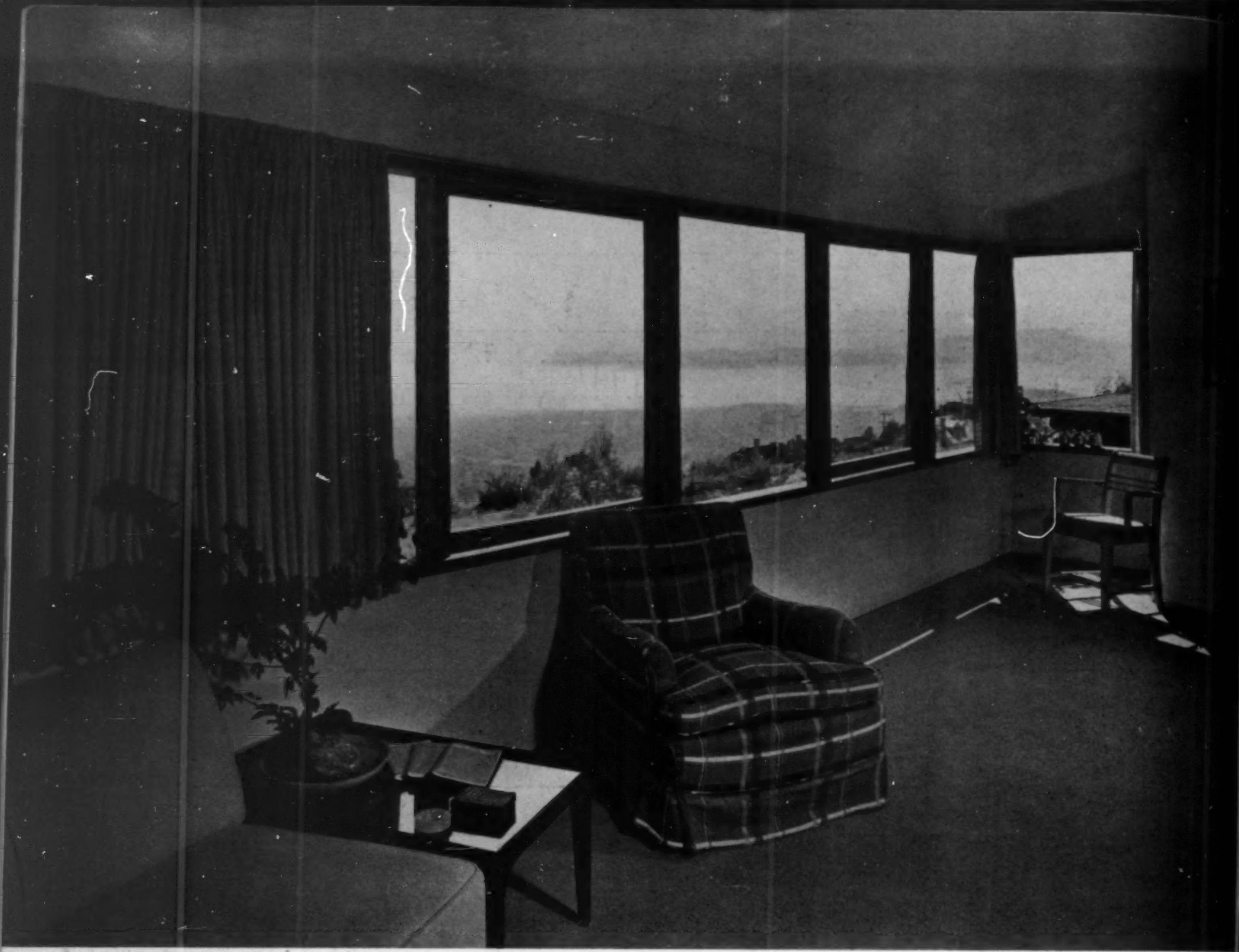
mild or only moderately serious. A majority expect moderate declines in industrial production and employment, and a moderate increase in dollar volume of construction contracts. We have given the economists' appraisal of the general situation and of the construction prospect considerable weight in making the accompanying estimates for 1948.

The figures in the table require little detailed explanation. An overall dollar volume increase of 7 per cent in contract volume is indicated. There is shown a 9 per cent increase in dollar volume of nonresidential building and a 4 per cent increase in residential contract volume. The indicated difference between the two is on the hypothesis that mounting costs will act somewhat more strongly as a deterrent to residential than to nonresidential building commitments. By reason of the very great need for rental housing a larger percentage increase is indicated for apartment buildings than for single-family houses. A moderate increase is also shown for heavy construction contracts. The one classification for which a moderate decline is shown, manufacturing buildings, is one which has been running very high since the war, and, we believe, not likely to continue at the same high levels; while a number of industrial programs are still to be carried out, many of them have been reduced in scope, some are being further deferred, a few have been abandoned.

Farm building, for which there are no adequate statistics, is likely to proceed in increased volume in 1948, by reason of the enormous farm income likely to be realized.

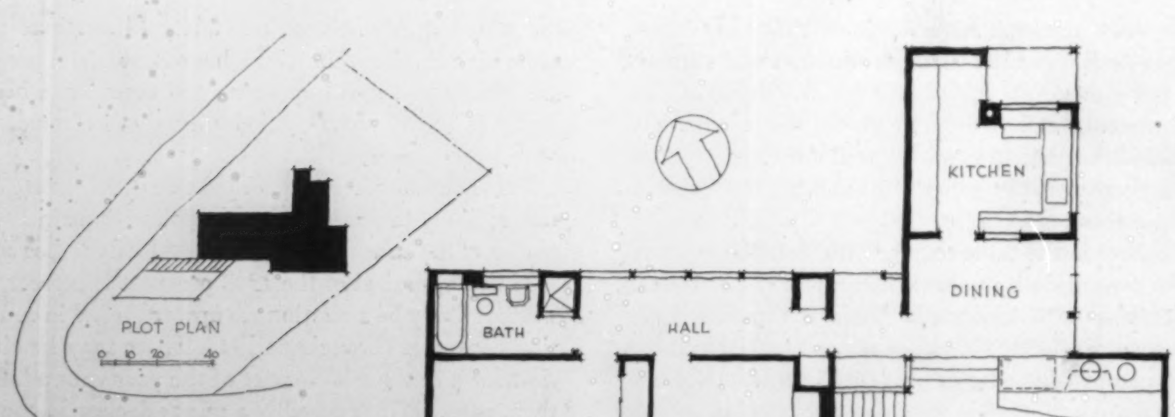
If this appraisal of the 1948 prospect is correct, there will not likely be a continuous upward trend in construction contracts throughout 1948. There may be either a slowdown in the middle part of the year with a later upturn, as in 1947, or possibly a minor decline in the latter part of the year.

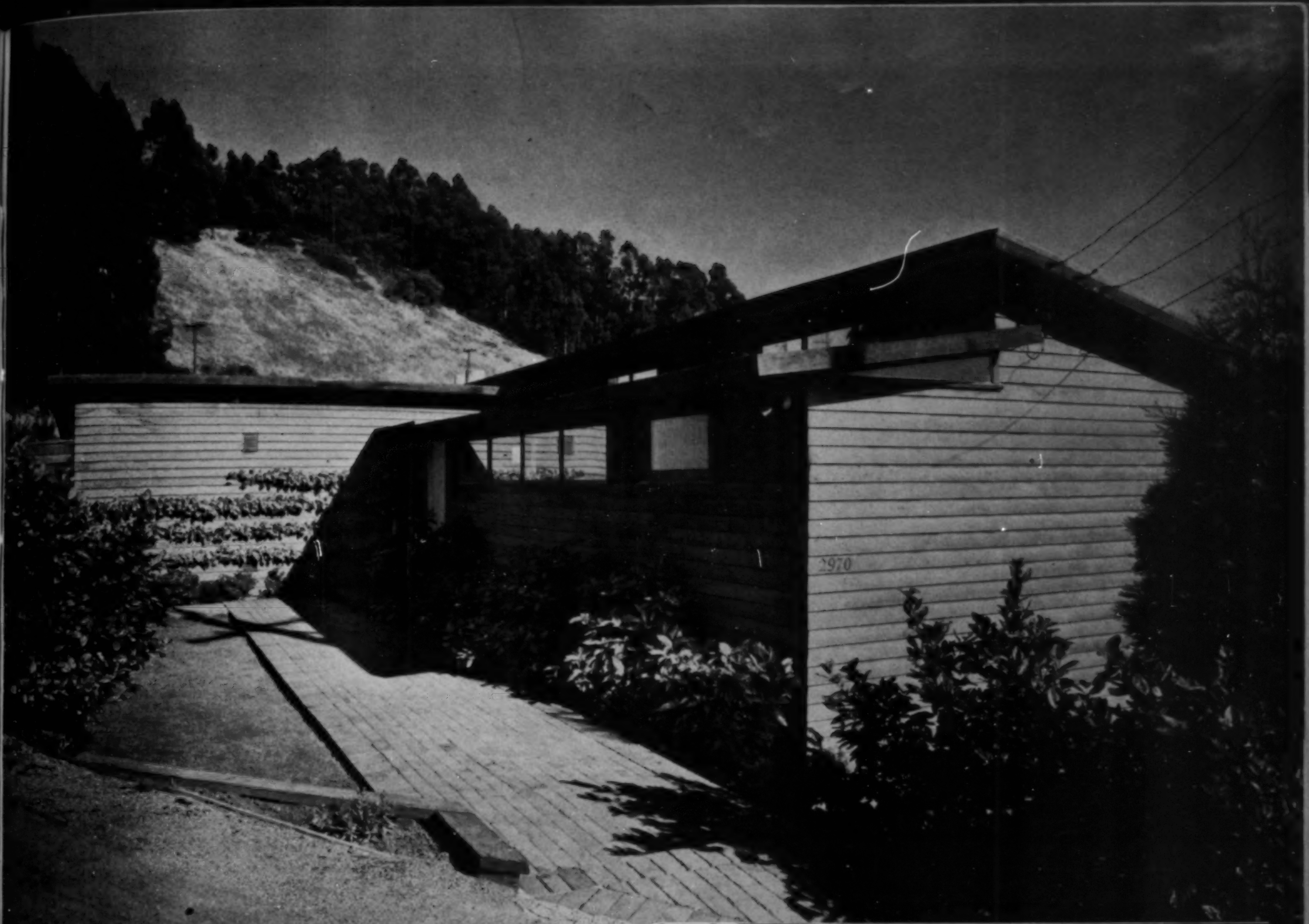
The volume indicated by these conservative advance estimates will, if realized, represent a reasonable measure of progress in catching up with deferred demands and even more progress toward a sound stabilization of construction markets. Substantially greater increases than are here indicated might well represent an inflationary boom leading to a situation that only a drastic deflation could correct.



Roger Sturtevant Photos

FREEDOM AND FRESHNESS IN COMPACT LIMITS


PLOT PLAN
0 10 20 40
KITCHEN
DINING
BATH
HALL
OWNER
CHILD
LIVING ROOM
GARAGE
0 5 10 15 20

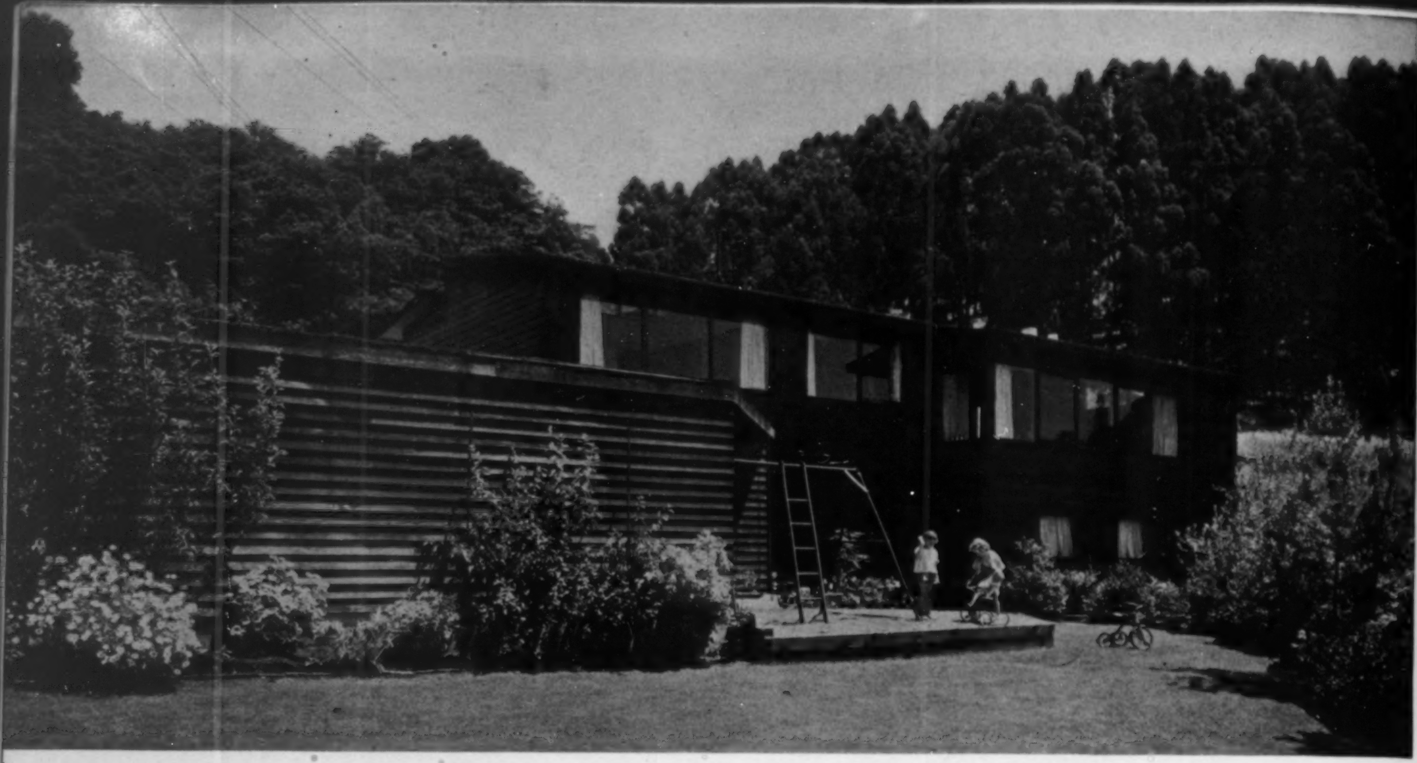


C. H. ATTHOWE HOUSE, BERKELEY, CALIF.

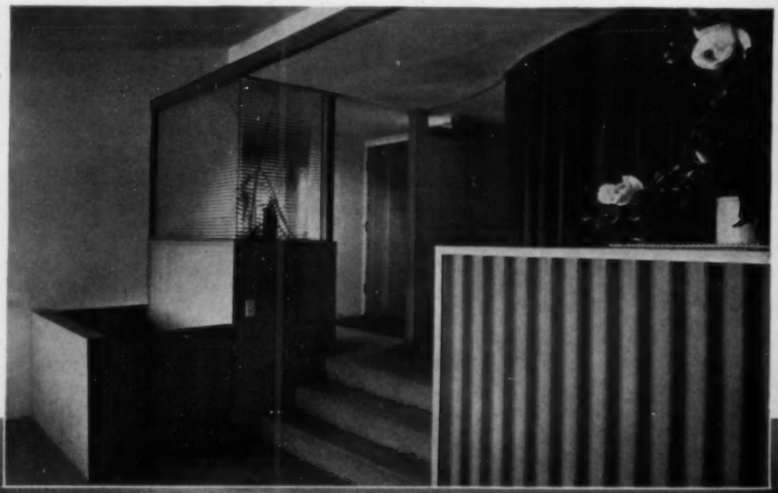
Francis Joseph McCarthy, Architect

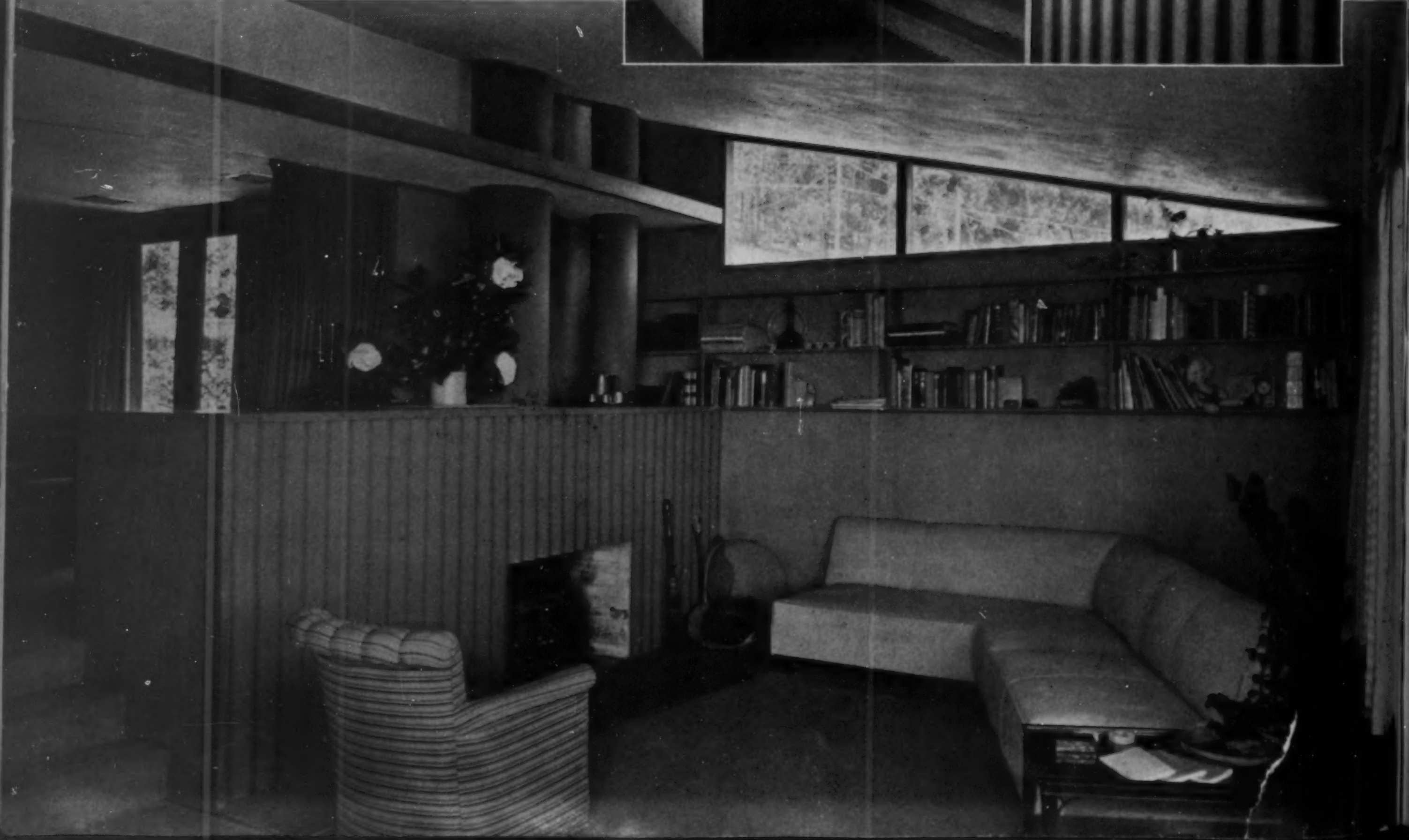
Manifestly the most has been made here of principal view possibilities, but even more significant are the provisions in other quarters for freedom and relaxation in what is really a minimum plan for a young family. As much as exhilarating prospects of San Francisco Bay, the clients wanted: "facilities for informal living and relaxed entertainment, mostly of small groups; easy access to the out-of-doors; and pleasantly convenient working conditions" for a self-sufficing young wife and mother. The architect's answer is compact in plan, economic in structure, and fresh in unself-conscious modern design.

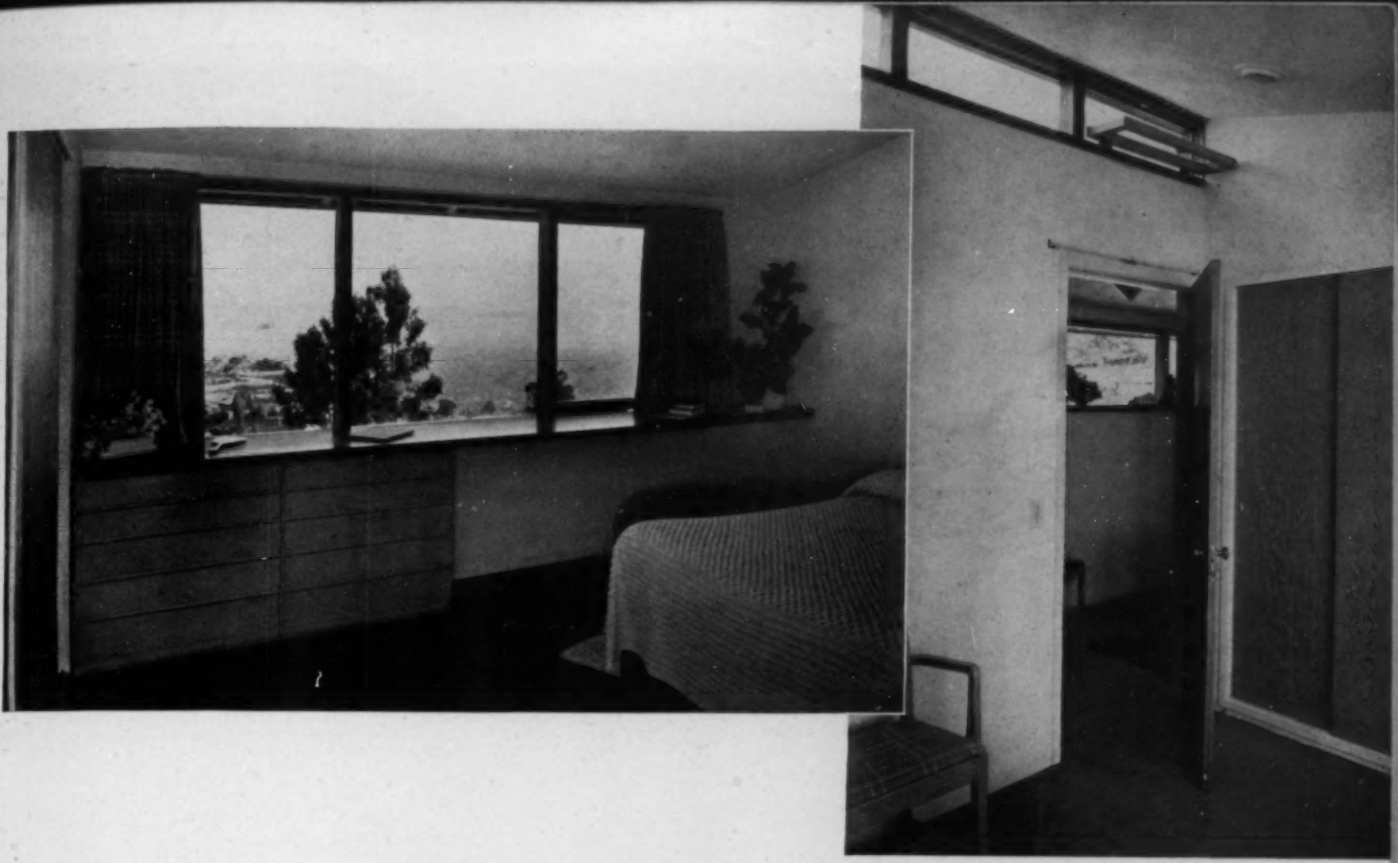
Structure is wood frame, with redwood beveled siding, stained green. Roof is tar and gravel. Floors are gum plywood, with linoleum in kitchen and bath. Interior walls are sand-finish plaster, integral color.



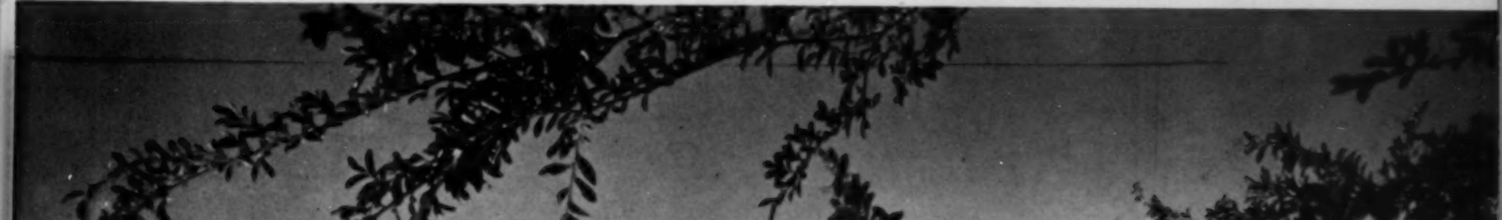
Above: east end of garage provides toy storage for adjoining play terrace. Indoor game room opening onto this level has access from the living room above, as shown at right; such placement of stairs does not interfere with earthquake bracing. Living room (below) seems much larger than its actual size, and permits a surprising variety of activity groupings. Gable windows admit morning sun, view of hillside

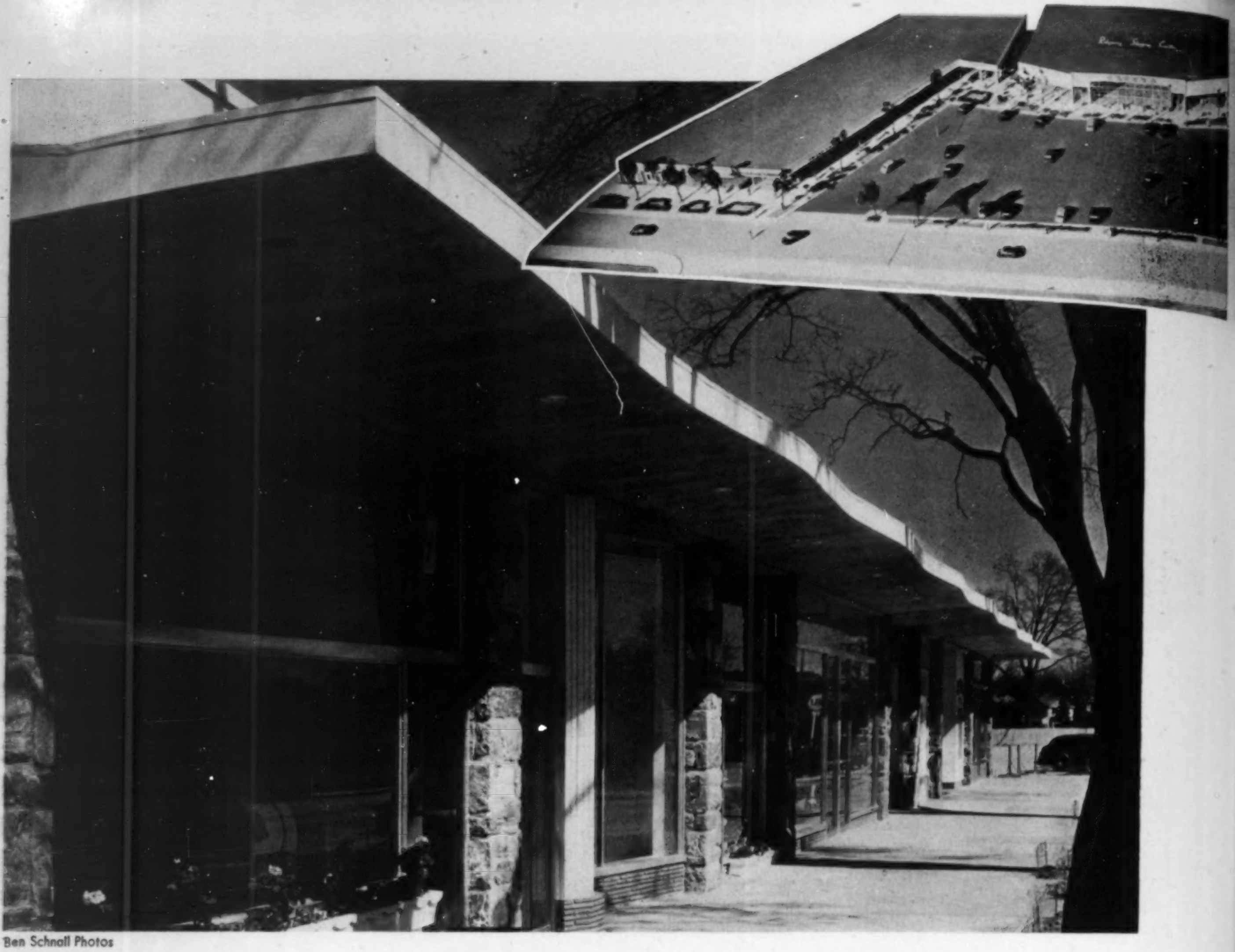






Above: prevailing winds at all seasons of the year are from the main view direction, with its large windows; clerestories in the bedrooms thus provide cross ventilation under moderate conditions, and control at other times when winds may be too aggressive. Below: in accord with the owner's wishes for free communication with the out-of-doors at all possible points, generous opening to the east terrace is provided from the dining room. Kitchen windows also overlook this area where the children play during the hours of morning sun, permitting supervision from within while housework is being accomplished under agreeable conditions of light and outlook. Moreover, the terrace serves in the owners' program of "informal, relaxed entertainment," for out-of-door dining, with kitchen entrance giving convenient service access





Ben Schnall Photos

REMEDY FOR A COMMON COMMERCIAL AILMENT

RIDGEWAY SHOPPING CENTER, STAMFORD, CONN.

Alfons Bach, Designer; Thorn & Jorge, Architects

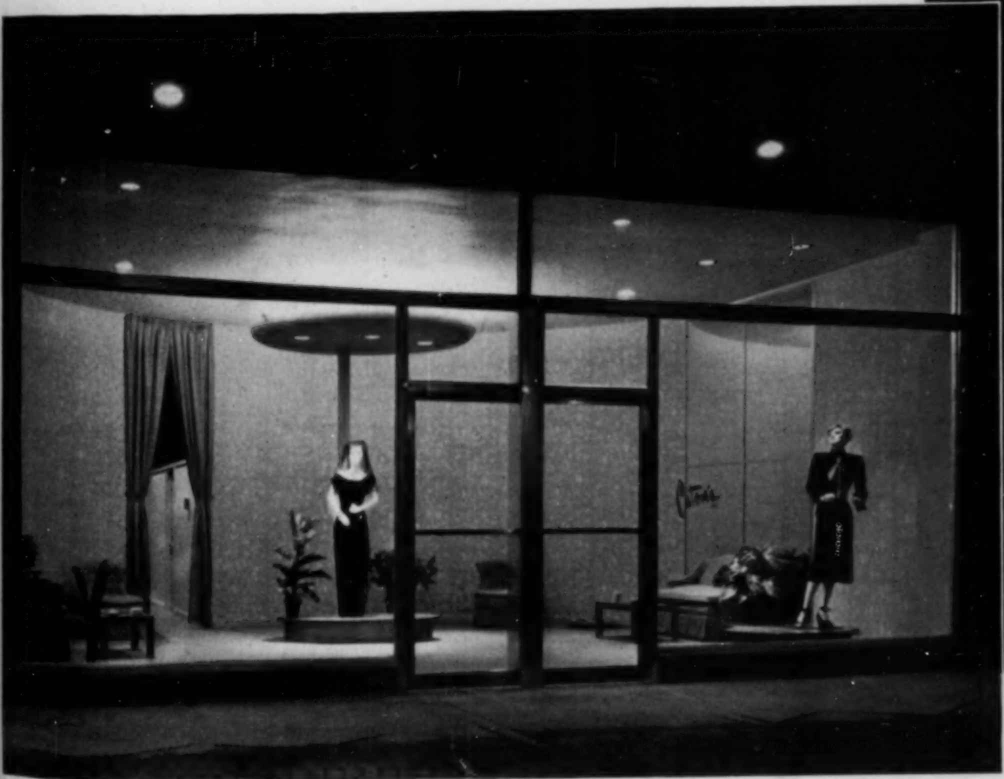
Ridgeway
Flowers

EXASPERATION in downtown Stamford, with a bare 800 metered spaces to park the predominantly automotive shoppers of a community of 70,000, drove one citizen to serious study. At first hypothetical, Alfons Bach's conclusions regarding the best site and scheme for a relieving center seemed so logical and salutary that a corporation was formed to make them actual. From this point, it took two years of canvassing and campaigning, to modify zoning laws and resolve other conflicts of interest, before the site was secured and the way cleared for the project.

Just opened to occupancy, the first units correspond generally to the left-hand section of the original model pictured above. The center section will be a New York City department store branch, for which working drawings have been completed very much according to the model outlines. Present plans for the right-hand portion show considerable change, to provide a movie theater and other facilities differing from the original.

Most of Stamford's apartment houses are concentrated near the Center. In addition it is calculated eventually to serve a shopping radius of 20 miles, with 1410 parking spaces providing for approximately 7000 cars, at a daily turnover rate of five per space.

The front parking lot of 260 spaces is now in use with the first units of the project. Immediately behind is Ridgeway Plaza with an additional 150 spaces; beyond this is a 5½-acre tract which will eventually provide 1000 more. The designers believe in at least two square feet of parking space to one of selling



Each front is expressively styled for individuality within the unifying character of the whole; pictured at right is the jewelry and silverware store exterior. Units are separated inside by cinder-block partitions; exteriors are defined by rough stone piers and flagstone bulkheads. General construction is steel framework; reinforced concrete foundation walls and floors; roof, reinforced poured gypsum with built-up finish

Intentions from the outset were that the Ridgeway Center be a relief from frenzied congestion and blatancy. Consequently there is throughout an air of serenity and clarity, by night as well as day. Stores are restricted in their devices for identification, advertising and display, with no signs and a minimum of lettering permitted on the windows. Sufficient latitude is obvious, however, for distinctiveness and attractive exertions toward the customer on the part of each store

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ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

PAINTS FOR MASONRY WALLS

How durable are the various masonry paints when applied to standard masonry building materials? Scientists of the National Bureau of Standards set out to find the answer to this question by a series of exposure tests, started six years ago. Wall specimens of stone- and cinder-concrete block, lightweight-aggregate block, new and used common brick, and cast concrete slabs were painted with cement-water, resin-emulsion, oil-base, and rubber-solution paints and exposed to atmospheric conditions in Washington, D. C.

Test results* showed that well-formulated masonry paints, skillfully applied, are durable under the following conditions:

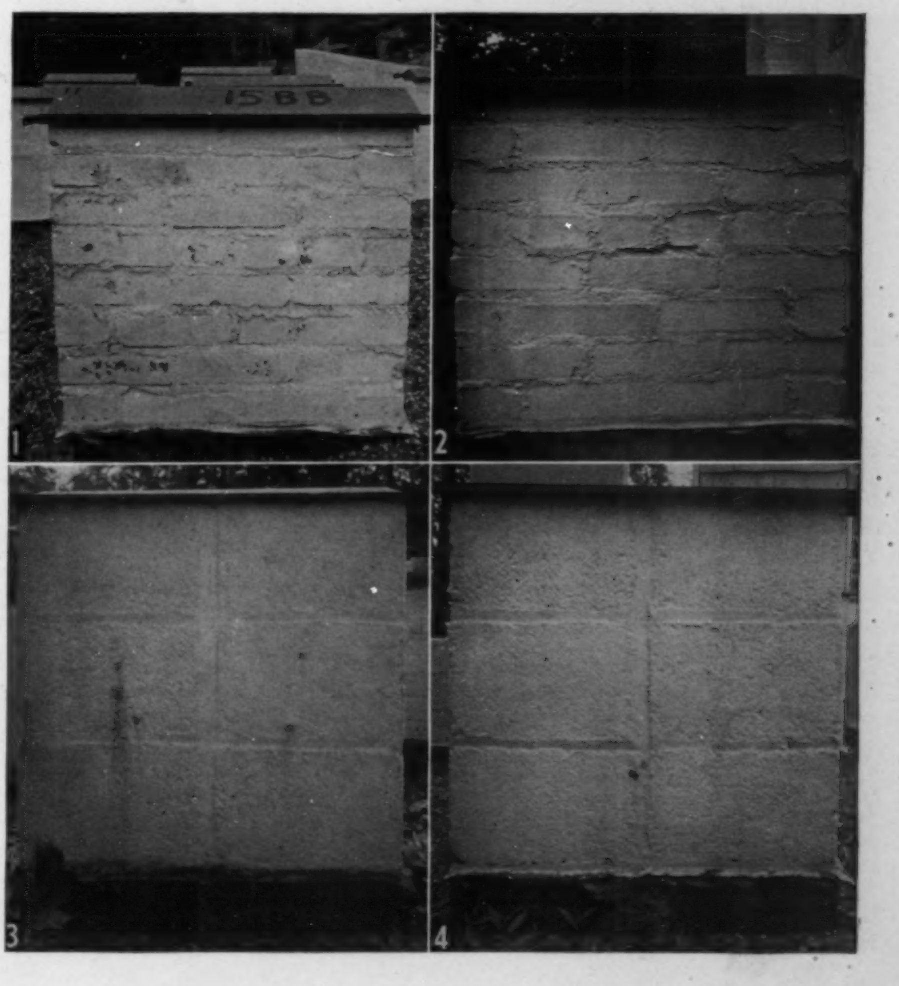
Cement-Water Paints. Portland-cement content should be not less than 65 per cent by weight. Cement-water paints are satisfactory for initial coating of new masonry with possible exception of cast concrete poured against oiled forms.

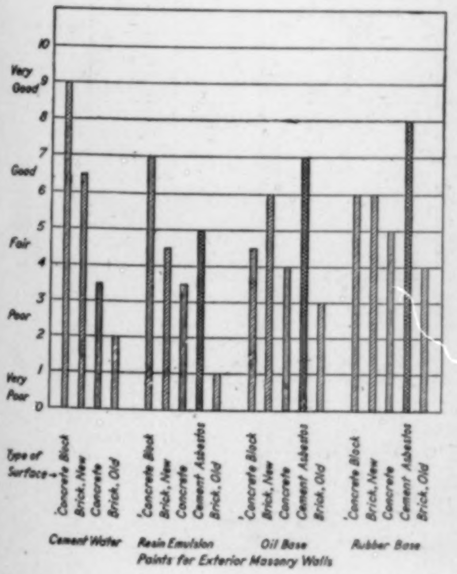
Further coatings are not necessary although for improved decorative value either an oil-base, resin-emulsion, or rubber-solution paint can be applied after the cement-water paint has been allowed to age (see table on next page, for time allowed between applications).

Sharp sand in the cement-water paint or a priming coat of grout improves the durability of subsequent organic coatings on open-textured walls or those with cracks or other defects.

Oil-Base Paints. On close-textured masonry or open-textured surfaces that have been moisture-proofed, oil-base paints can be used, although new surfaces of both types should not be painted for from six to twelve months. Walls must be dry and so constructed as to remain dry after painting. When applied to a wet wall or one that becomes wet through structural defects, oil-base paints will fail by scaling and flaking. Under normal conditions they weather

Right, several of the hundreds of test walls, showing: (1) failure of oil-base paint applied directly to new common brick; (2) same paint applied over a grout; (3) rust stains "bleeding" through two coats of cement-water paint on cinder block containing iron particles; and (4) better protection afforded same specimen by rubber-base paint applied over a grout. Below, summary of test results





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* To be published in "Paints for Exterior Masonry Walls," by Clara Sentel, National Bureau of Standards.

by chalking, a property that makes them self-cleaning.

A grout of portland cement and sharp sand gives a good base coat on open-textured surfaces such as stone- or cinder-concrete blocks, lightweight-aggregate block, and new and used common brick with untooled joints. The grout may be applied immediately upon erection of the wall or at any time during the aging period of from six to twelve months, and should be allowed to set for at least 90 days.

A protective primer, such as rubber-solution paint, should be used as a first coat over the grout if there is a possibility that the wall is damp or contains soluble salts. One coat of oil-base paint should give a good finish, although two coats will have greater durability.

Resin-Emulsion Paints. These coatings are durable and have good decorative qualities. Open-textured surfaces and brick walls with cracks around mortar joints should be given a base coat of grout or cement-water paint containing sharp sand. Resin-emulsion paints provide good coverage and are readily applied by brush or spray to either damp or dry walls. A minimum of three weeks should elapse before painting new walls.

Synthetic-Rubber Paints. There are two types of these paints, rubber-emulsion and rubber-solution. They may be applied to either dry or slightly damp walls but not on wet surfaces because excessive moisture may prevent adequate bond.

Rubber-solution paint is similar in composition to oil paint, with rubber resin replacing the synthetic or natural resin in the vehicle. Though especially suitable for coating cement-asbestos shingles or siding, it also gives good service on other masonry surfaces. Such a paint may be brushed or sprayed on a surface to form a protective primer, under oil-base or resin-emulsion paint, or as a complete coating of two or more coats. Normally two coats give adequate coverage and good durability. On open-textured surfaces, cement-sand grout should first be applied and allowed to dry from three to six days.

Time to be allowed between applications of typical masonry paints on concrete and clay surfaces

Wall specimens	Grout		Cement water		Resin emulsion		Oil base		Rubber solution	
	1st coat Drying time	2d coat Drying time	1st coat Drying time	2d coat Drying time	1st coat Drying time	2d coat Drying time	1st coat Drying time	2d coat Drying time	1st coat Drying time	2d coat Drying time
	Days	*Days*	*Days*	*Days*	*Days*	*Days*	*Days*	*Days*	*Days*	*Days*
Stone-concrete block	1	1								
	1			1						
	30				1	1				
	90						2	2		
	3								1	1
			1	1						
			30[1]		1	1				
			90[1]				2	2		
			3[1]						1	1
Cinder-concrete block	1	1								
	1			1						
	30				1	1				
	90						2	2		
	3								1	1
			1	1						
			30		1	1				
			90				2	2		
			3						1	1
Lightweight aggregate concrete block	1	1								
	1			1						
	30				1	1				
	90						2	2		
	3								1	1
			1	1						
			30		1	1				
			90				2	2		
			3						1	1
New common brick[2]			1	1						
			30		1	1				
			90				2	2		
			3						1	1
					1	1				
							2	2		
									1	1
Cast concrete			1	1						
					1	1				
							2	2		
									1	1
Cement-asbestos shingle					1	1				
							2	2		
									1	1
Used common brick:[3]										
Sound, with tight joints									1	1
Chipped or with open joints	3								1	1

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[1] *If two coats of cement-water paints are needed, second coat may be applied 24 hours after first coat*

[2] *Grout is not normally used on new common brick, but when necessary follow same procedure as for concrete block walls*

[3] *Unstained used common brick can be treated same as new common brick*

NEW EQUIPMENT FOR PLANNED LIGHTING

By C. L. Crouch and R. W. McKinley***

*Technical Director, Illuminating Engineering Society, New York

**Editor, IES Lighting Handbook, Illuminating Engineering Society

It is significant that the International Lighting Exposition held recently in Chicago was informally known as the "planned lighting show." The illuminating engineer is departing from primary emphasis on the lighting fixture as a medium for expressing the physics of light control. Along with the architect, he now thinks of an interior as an integrated whole — a functional environment to serve specific needs. No doubt the architect has helped greatly to bring this thinking about, and now, more than ever before, there is a blending of the interests of both groups, and the solicitation of mutual aid.

The exposition, of course, was an exhibit of lighting fixtures and equipment with which planned lighting might be achieved, as for example: complete louvered ceilings, a unique development by architects (see ARCHITECTURAL RECORD, April, 1946, p. 72). Such ceilings need no longer be custom-built since they now are a production item by the lighting manufacturers. New circular and semicircular fluorescent lamps offer a variety of pleasing commercial applications as well as an increase of comfortable lighting in the home. New designs of glass block have brought comfortable unilateral daylighting to the classroom. A variety of well-shielded low-brightness luminaires are now available to suit every need.

Current Lighting Philosophy

Illuminating engineers in the last four or five years have developed their engineering practice in harmony with the principles of how we see best, in order to make lighting truly functional.

The study of recommended brightness ratios and reflectance values would require a separate technical article. But, briefly, it has been found that the amount of light on the task is only a part of lighting; brightness of the surrounding environment completes the partnership. Light-meters testify to the availability of sufficient light for today's tasks, but both visual comfort and performance demand that special emphasis be placed upon the environment and its relationship to the work.

We see best when there is a minimum difference in brightness between the task and other parts of the environment. Better seeing is achieved in every day practice through a combination of: (1) lighter room and furniture finishes, (2) well-shielded lower brightness lighting fixtures, (3) careful daylight control.[1]

New Lighting Tools

Louverall Ceilings. Much interest has been expressed in this type of louvered overall ceiling. It presents a clean-cut appearance covering up all structural non-uniformities and mechanical equipment; and often gives the feeling of latticed daylighting. Further, depending upon the size and shape of the louvers, a decorative pattern or texture is formed overhead. The hexagonal type, stamped from matte surfaced aluminum, gives a honeycomb effect and permits slight misalignment without the apparent distortion that is obvious with straight lines. These cells can accommodate the PAR-38 spot lamps on gimbal mounting for highlighting.

Small Vinylite plastic louvers present an attractive pattern like a woven texture. With approximately 70 per cent light transmission as well as good oblique reflection from the sides of the cells, this ceiling produces a uniquely light and airy effect.

Other louver patterns are equally advantageous and are available in light-gauge steel finished in white enamel; a type that has proved highly satisfactory for the construction of louvered lighting fixtures developed in the last few years.

Glass Block. The interesting work of Dr. Harmon and associates in studying the effect of controlled environment on the welfare of school children in Texas (see ARCHITECTURAL RECORD, February, 1946, p. 79) has resulted in the use of a

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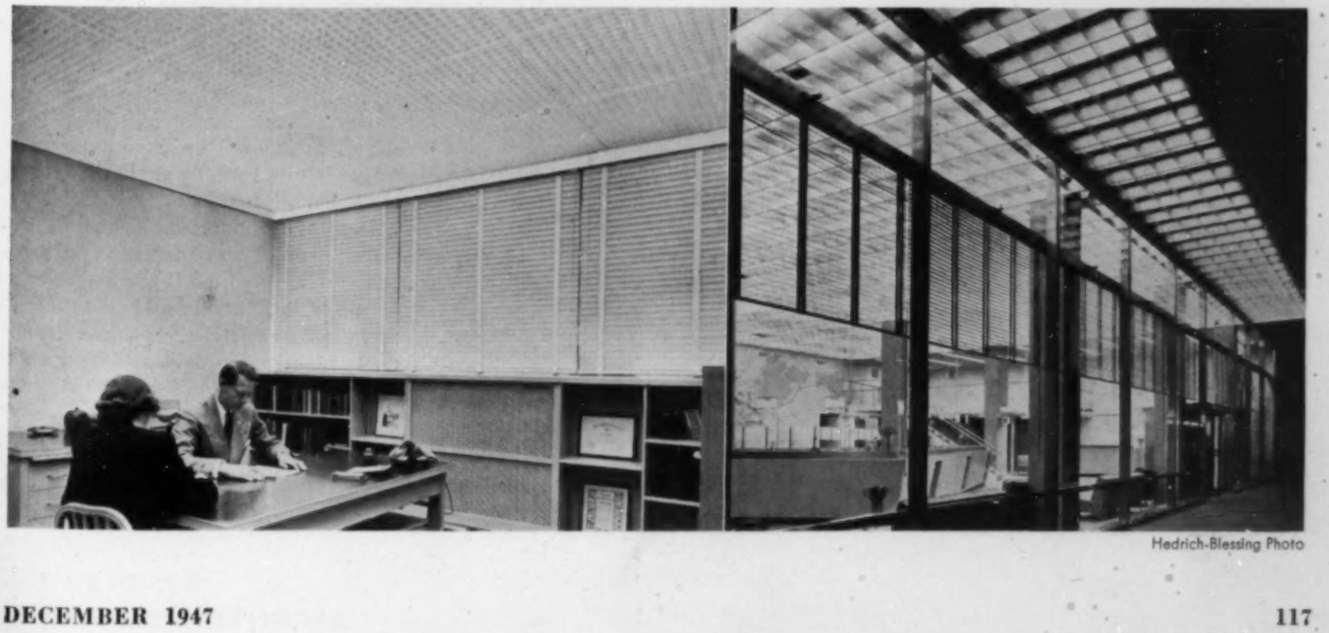
[1] "Recommended Practice of Office Lighting," "American Standard Practice for School Lighting," and "IES Lighting Handbook" (for all applications): publications of the Illuminating Engineering Society, 51 Madison Ave., New York.

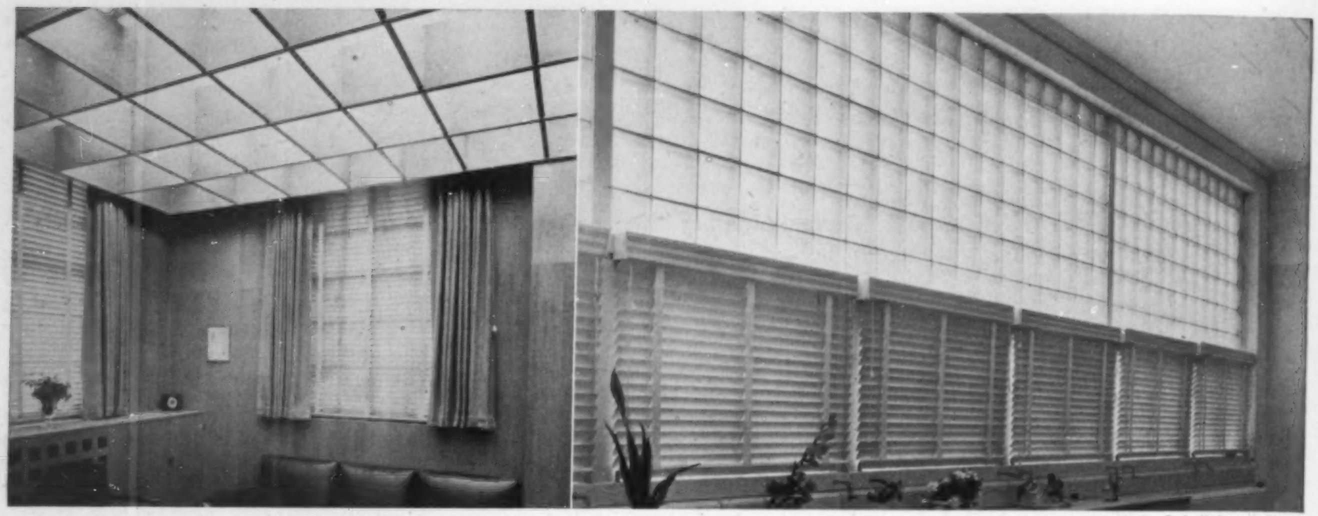
Louverall ceilings furnish light shield over entire room. Left, small cells of Vinylite plastic glow with light. Right, bar aluminum louvers are used for TWA Ticket Office, Chicago: Skidmore, Owings, and Merrill, Architects and Engineers



Hedrich-Blessing Photo

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH



R. A. Kolvoord Photo

Left, wood louvers, 12-in. deep, provide 45° shielding. Right, more even natural lighting results from glass block of special prism type which provides cutoff for sun's rays and directs light upward toward the ceiling (Rosedale School, Austin, Texas)

prism type of glass block as a medium of daylight control. Daylighting, with its relatively high intensity and great variations, presents a particularly difficult problem of fenestration, in order to control its usefulness for lighting purposes and yet keep its associated luminous areas in harmony with the rest of the environment.

CLM Portable Lamps. This year, for the first time since the war, a series of new engineering designs for portable lamps for the home have reached the market. These are successors to the prewar I.E.S. Certified Lamps. The Illuminating Engineering Society drew up "Lighting Performance Recommendations for Portable and Installed Residence Luminaires,"[2] upon which the new designs of the Certified Lamp Manufacturers are based. These lamps are designed to serve the dual purpose of well-shielded local down-lighting for the home tasks of reading, writing and recreation as well as diffused upward lighting for the room as a whole to reduce harsh contrasts of light and darkness.

The new designs feature a more efficient diffuser bowl and an upper metal reflector which not only reflects more light downward but acts as a shield to the standing observer who might glance obliquely into the top. Many of the designs incorporate a 12-in. circular fluorescent lamp wrapped around the diffuser in order for the combination to produce up to 45 foot-candles of excellent white light quality.

Circular and Semicircular Fluorescent Lamps. Besides the 12-in. circular lamp (Circline) there has been announced an 8¼-in. 22-watt size and a new 12-in. semicircular lamp (Circlarc) of 18-watt rating.

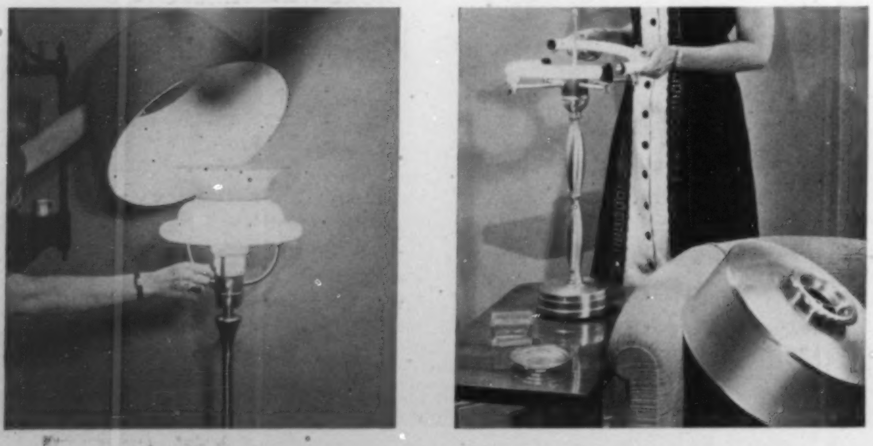
This series now provides an opportunity to depart from straight line contours and introduce interesting variations of circular, semicircular and reverse curves. It is anticipated that these lamps will find special popularity in the home where the length of the commercially popular sizes may seem too cumbersome and stiff. The 12-in. semicircular lamp may be used in pairs to form a 12-in. circle, and to advantage in locations that require easier disconnection and removal.

"Pin-it-up" Fluorescent Lighting. An interesting line of prefabricated lighting components are now available to be attached to walls or furniture, individually or in continuous lines, and plugged in for the lighting of coves, valances and soffits.

Fluorescent Lighting Fixtures. A great variety of attractive well-shielded low-brightness lighting fixtures are now on hand, as evidenced by the exhibits at the International Lighting Exposition. Care should be taken, however, to check the shielding and the brightness measurements in the zone from the horizontal to 45° below.

Design Competition. Taking a cue from architectural practice, and continuing the emphasis upon planned lighting, The National Electrical Manufacturers Association recognized the importance of the individual designer and creative team by keynoting the show with a lighting design competition. Over 450 entries were submitted, covering diversified lighting problems all the way from style-conscious metropolitan stores to rural school classrooms.

Left, new lamp of Certified Lamp Manufacturers has shielded diffuser and a circular fluorescent lamp. Right, semicircular shape offers new freedom in fluorescent design



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[2] *Illuminating Engineering, July, 1946, p. 521.*

ALUMINUM UNIT RAILINGS

Aluminum handrails have long been a time-consuming and expensive building item when designed and built to specification. Answering the need for a packaged type of aluminum railing that can be bought ready for assembly is the *Multi-Rail aluminum unit railing*, adjustable to varying stair pitches and lengths, and spacing of balusters. Height is 31 in. The units are shipped knocked down and ready to assemble on level surfaces, or on steps with an angle of pitch between 30° and 43°. Milled cuts in the ⅝ in. hollow square balusters allow them to slip into a specially designed extrusion to form a locked joint and are held in place by flat spacers. Length of the spacers can be varied, though standard spacing is 5 in. The extrusion is made in multiples of 6 in. up to 6 ft. in length. The railing assemblies come in either standard or heavy-duty types, with anodized or plain aluminum finish; furnished complete with connecting clips, flanges, and fasteners for field assembly. Guard Engineering Co., Box 5, Belleville 9, N. J.

FOLDING DOORS

Modernfold doors, formerly built only to specification, are now offered in two standard sizes for openings 2 ft. 4 in. wide by 6 ft. 8½ in. high, and 2 ft. 10½ in. wide by 6 ft. 8½ in. high. These accordion-type doors are covered with vinyl-coated fabric, white or beige in color, said to be washable and fire-resistant. New Castle Products, New Castle, Ind.

FIRE-RETARDANT ENAMEL

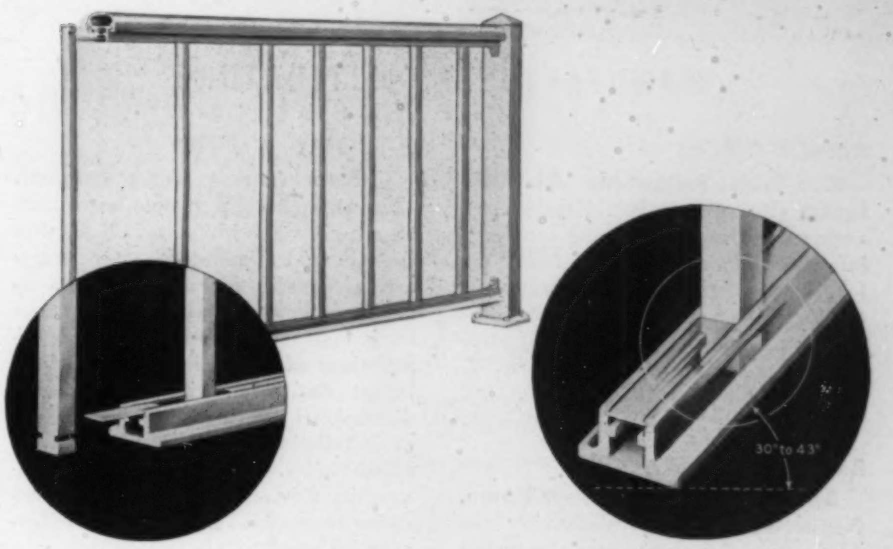
Interest in fire-retardant paints followed closely upon the disastrous hotel fires last year, in which inflammable finishes were judged a significant cause of the spread of fire. A new high-gloss paint, *Resistall*, is announced as the first enamel paint to meet Army and Navy specifications for fire-retardants. It can be used as both prime and finish coats, and reduced with any of the common thinners or tinted with regular oil colors without affecting fire-retardant properties; for application to wood, plaster, cement, metal, insulation board, and acoustical tile. Brytenu Chemical Mfg. Co., 408 Madison St., New York 2.

LIGHTING

Luminous Ceiling

A luminous overall ceiling of translucent louver sections characterizes the *Sky-Glo Ceiling System;* announced as the answer to lighting plans that call for inconspicuous high-lighting levels, with low brightness contrasts. The translucent louver sections, which provide crosswise and lengthwise shielding, are Vinylite plastic. Benjamin Electric Mfg. Co., Des Plaines, Ill.

Aluminum railing comes as a packaged item, ready to install on level surfaces or steps



Combined Lighting-Ventilation

Air discharge openings are built around the sides of *Line-O-Flow fluorescent fixtures*, for flush mounting in ceiling air ducts. In this manner lighting and ventilation are combined inconspicuously, with the least possible interruption of ceiling areas. Models can be used as either supply or return ducts; and are equipped with adjustable balancing dampers. Also manufactured are long slim outlets for air circulation only. The Barber Coleman Co., Rockford, Ill.

Adjustable Downlight

The *Dramatizer Downlight* is designed for concentrated lighting of displays, showcases, etc. Surface mounted individually or in-line with fluorescent troffers, it is adjustable in a complete circle up to 35° from the vertical axis. The lamp is a 150-watt PAR 38 incandescent, shielded by concentric louvers. Pittsburgh Reflector Co., Oliver Bldg., Pittsburgh, Pa.

Kitchen Luminaire

The *Circle-Plus Kitchen Luminaire* combines incandescent and fluorescent lighting. A ceramic glass bowl, containing a 100-watt bulb, is encircled by one of the new circular fluorescent lamps. The incandescent lamp lights instantly and is quickly augmented by the fluorescent. Mitchell Mfg. Co., 2525 Clybourne Ave., Chicago 14, Ill.

COVE CORNER TRIMS

A new series of aluminum corners and end stops for covered linoleum floor installations have been announced. They are available for both 4½ in. and 6 in. cove base heights, and can be used with all gauges of materials. The series include inside and outside corners, right and left end stops, a binder bar for securing the top edge of the covering, and a matching cap strip for use where linoleum extends on up to wainscot height. B & T Metals Co., Columbus 16, Ohio.

PLYWOOD HOUSES

Semi-prefabricated units of plywood for house construction now include subflooring, wall sheathing, and roof-sheathing, as developed for American Houses, Inc., by U. S. Plywood Corporation. Typical specifications call for sub-flooring of ⅝-in. plywood. Flooring units are 4 ft. wide, and plant assembled in required lengths to bear on girders and sills. Header strips of 5⁄16-in. plywood, ripped to required width, are applied to exterior walls between wall units and foundation. In exterior walls, ribbon strip of ⅝-in. plywood is set into studs flush with the interior face. Exterior faces are covered with 5⁄16-in. plywood sheathing. Sections are factory assembled into units approximately 8 ft. in height and 4 ft. wide. Window panels are made of ¼-in. exterior plywood. Roof sheathing is ⅜-in. plywood, shipped cut to specification for field application. U. S. Plywood Corp., 55 W. 44th St., New York 18, N. Y.

Plywood subflooring and wall and roof sheathing speed building of semi-prefab

(*Continued on page 144*)

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

MANUFACTURERS' LITERATURE

AIR DIFFUSERS

Kno-Draft Adjustable Air Diffusers (Bulletin K-20). Catalog and engineering data book giving necessary information for the selection of diffusers for scientific air distribution. Besides full catalog data on diffuser types and accessories, the general principles of controlled ventilation are discussed. W. B. Connor Engineering Corp., 114 E. 32nd St., New York 10, N. Y.

BRASS AND COPPER

Brass and Copper in Your Home. Non-technical booklet describing the part played by these metals in house construction: copper piping for radiant heating and plumbing, bronze screens, brass and bronze building hardware, copper roofing products. 20 pp., illus. Chase Brass & Copper Co., Waterbury 91, Conn.*

CONCRETE

Calcium Chloride in Concreting (Bulletin 28). Handbook describing the uses of calcium chloride in concrete mixes to accelerate rate of hardening of portland cement: how to use, examples of successful applications, technical abstracts and references, and specifications. 64 pp., illus. Calcium Chloride Assn., 1028 Connecticut Ave., N. W., Washington 6, D. C.

Handbook of Frame Constants. Engineering tables of carry-over and stiffness factors and fixed end movements for a variety of members and loading conditions. It contains 27,050 constants for 1390 members to assist in the analysis of almost any indeterminate structure. 32 pp., tables. Portland Cement Assn., 33 W. Grand Ave., Chicago 10, Ill.*

CONVECTOR RADIATORS

How to Live in June All Winter. Colorfully illustrated booklet depicting semi-recessed and free-standing convector radiators in different types of interiors; also cut-away views showing details of construction, and a table of standard convector sizes. 36 pp., illus. The Trane Co., LaCrosse, Wisc.*

ELEVATOR DOORS

Elevator Door Details. Plans and sections of elevator entrances for the following types of doors: single-swing, single sliding, two-speed sliding, center opening, freight elevator, dumbwaiter, and hatchway safety gates. 6 pp., illus. Montgomery Elevator Co., Moline, Ill.

Q-FLOOR WIRING

Q-Floor Wiring Data Manual. This comprehensive manual opens with a general description of Robertson Q-floors and General Electric fittings and accessories for utilizing them as raceways for electrical conductors. Successive sections contain detailed descriptions of the fittings, and data on layout design and installation; also, dimensional drawings, and photographs of installation steps. 83 pp., illus., in spiral binder. General Electric Co., Advertising Div., Appliance and Merchandising Dept., 1285 Boston Ave., Bridgeport 2, Conn.*

HEATING

Janitrol Heating Guides: (1) Winter Air Conditioning; (2) Gravity Warm Air Heating Systems. First of a series of guides containing a compilation of information on gas heating systems: floor plan examples, locations of registers or convectors, suggested specifications, and other details. Ten guides in all will be published, in collaboration with Professor S. Konzo, School of Heating and Ventilating Engineering, University of Illinois. 8 pp., each, illus., tabbed for filing. Surface Combustion Corp., Toledo 1, Ohio.*

What We Have Learned From 1000 Radiant Heating Installations. A review of the present extent of radiant heating installations in this country: geographical distribution, types of buildings, piping layouts, and fabricating methods. 12 pp., illus. A. M. Byers Co., Pittsburgh, Pa.

GLASS DOORS

Announcing the New Herculite Door-Frame Assembly. Dimensional drawings of the 12 available styles of door-frame assemblies designed for Herculite all-glass doors, including variable dimension tables and typical section views. 8 pp., illus. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.*

STEEL FACTORY SASH

Hope's Lok'd Bar Steel Sash. Catalog describing steel factory sash in pivoted and commercial projected types, designed for extra strength. Includes dimensions and physical data; full-scale section drawings of frames, muntins, mullions; installation details; tables of window opening dimensions; suggested layouts for bays; photographs of installations. Hope's Windows, Inc., Jamestown, N. Y.*

LIGHTING

(1) Viz-Aid Commercial Fixtures; (2) Day-Line Industrial Fixtures; (3) Display Lighting; (4) Classroom Lighting. Catalogs of fluorescent fixtures for these various types of lighting installations; tables for figuring footcandle intensities, suggested lighting layouts, and mounting data. 12, 12, 8, and 8 pp., illus. Day-Brite Lighting, Inc., St. Louis 7, Mo.*

Colovolt Lighting. A collection of literature in a binder describing the principles of cold cathode low-voltage fluorescent lighting: technical data sheets, fixture types, mounting data, installation instructions, a catalog of available lighting units, and views of actual installations. 32 pp., illus. General Luminescent Corp., 732 S. Federal St., Chicago 5, Ill.*

Overall Lighting by Wakefield. New catalog of lighting fixtures with emphasis upon louvered and shielded units for fluorescents. Includes lighting design data, and mounting data for rooms of different sizes and ceiling heights. 34 pp., illus. F. W. Wakefield Brass Co., Vermilion, Ohio.

STRUCTURAL ROOF DECKS

Zonolite Short Span Structural Roof Deck. Brochure describing the use of Vermiculite insulating concrete in the construction of monolithic roofs: typical installations, sample specifications, construction methods. 4 pp., illus. Universal Zonolite Insulation Co., 135 S. LaSalle St., Chicago 3, Ill.*

WOOD PRESERVATIVES

Penta Preservatives. The story of how modern chemistry and pentachlorphenol solutions are making wood last longer, by protecting it against decay, fungi, and insects. 12 pp., illus. Chapman Chemical Co., 333 N. Michigan Ave., Chicago 1, Ill.*

WHITE CEMENT

Trinity White Portland Cement. Folder describing properties of an extra-white portland cement, and its uses in concrete structural units, stucco, cement paints, terrazzo, floors, and miscellaneous. 4 pp., illus. Trinity Portland Cement Division, General Portland Cement Co., 111 W. Monroe St., Chicago.

LAMINATED WOOD

(1) Engineering in Wood; (2) Timberib Rafters. Booklets describing arched structural shapes available in glued laminated wood; also, finishes and treatment, framing details, and erection methods. 4 and 16 pp., illus. Timber Structures, Inc., P. O. Box 3782, Portland, Ore.*

(*Continued on page 156*)

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* *Other product information in Sweet's File, 1947.*

NEIGHBORHOOD SHOPPING CENTERS

(Data from "The Community Builders Handbook," courtesy Urban Land Institute.)

THE typical neighborhood shopping center is a highly special merchandising entity. Far from being just a group of stores, it is a careful section of complementary stores, each making its own contribution to the drawing power of the group. Usually all are of the "service" type catering to a housewife in her work-a-day shopping. Its first appeal is the supermarket; its competitive advantage lies in its parking facilities.

Except for the very small center (above right), which might serve a community of 250 to 300 families, a minimum of 500 families is considered necessary to support a center of from ten to twelve shops, and 1000 to 3000 families to support a large one of from 25 to 40 shops.

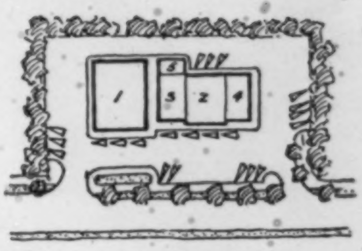
With the supermarket are grouped other stores of the basic service type: a drug store, dry cleaner, laundry agency, shoe repair shop, etc. As shopping centers grow in size, serving larger communities, other store types become practical (see plans of the larger developments).

The importance of highway approaches from other areas and transportation servicing the center should be stressed. Shopping centers often draw a sizable portion of their volume from areas outside what might be considered the normal or tributary area. This is particularly true if convenient parking is provided.

Adequate off-street parking should be an integral part of the shopping center; with good balance between front and rear parking. Best plan is to provide a moderate size parking area in front of the shops to take care of normal parking and a larger area to the sides and rear to accommodate automobiles during the peak period.

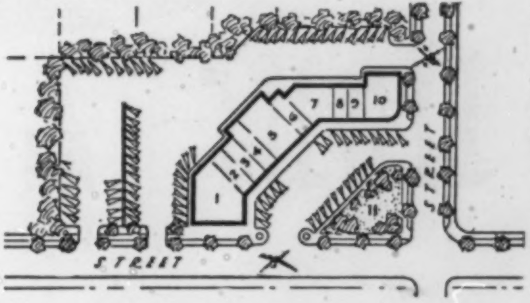
It has been found that if all parking is in front of the shops, store fronts must be an excessive distance from the street, presenting an unattractive paved area during off-peak periods. Conversely, if all parking is to the rear, the motorist is often discouraged in seeking parking space.

Under average conditions, two square feet of off-street parking space should be permanently reserved for each square foot of store area. Where the amount of pedestrian trade is expected to be relatively high because of adjacent multi-family developments or relatively low income groups, the ratio may be lowered somewhat. Where the drive-in trade will form the bulk of patronage, ratios up to three-to-one may be required for adequate parking.



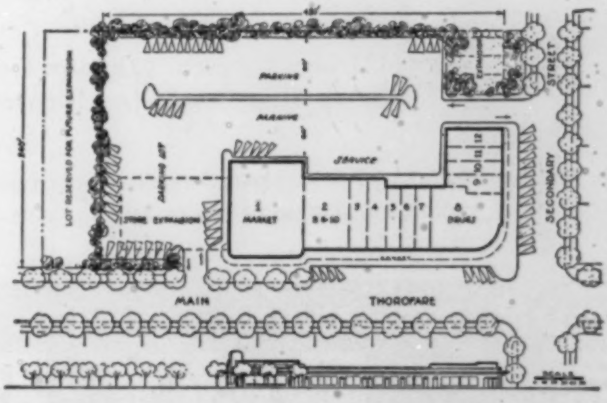
Store Group for 250 to 300 Families

(1) Grocery store, (2) drugs, (3) beauty and barber shop, (4) cleaning, laundry, and shoe repair, (5) service, heating, etc.



Store Group for 300 to 500 Families

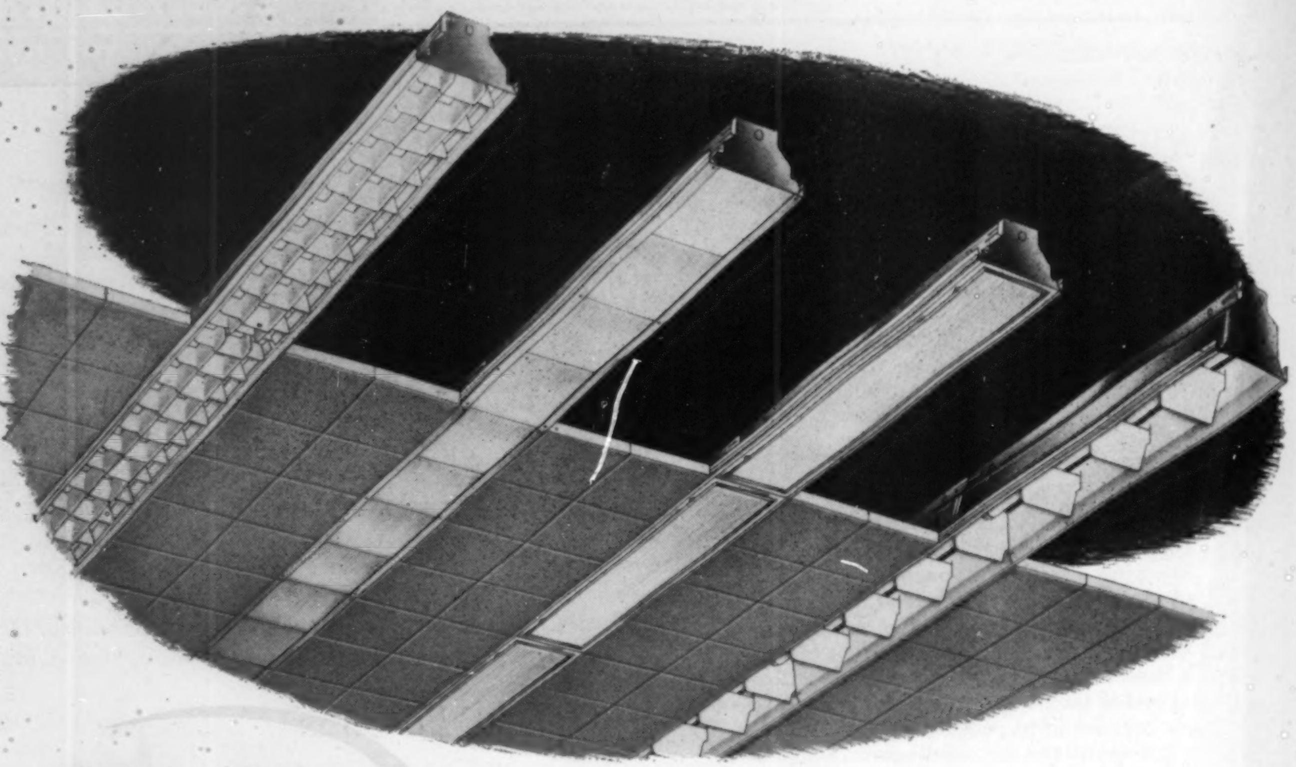
(1) market, (2) cleaner and dyer, (3) ladies wear, (4) beauty shop, (5) variety store, (6) bakery, (7) delicatessen, (8) shoe repair & laundry, (9) barber shop, (10) drugs, (11) possible gas station



Shopping Center for 500 to 700 Families

(1) market, (2) variety store, (3) delicatessen, (4) ladies wear, (5) beauty shop, (6) florist, (7) gift shop, (8) drug store, (9) cleaner, (10) radio shop, (11) shoe repair, and (12) hardware

(Continued on page 125)



LIGHT— AN ARCHITECTURAL MEDIUM

with flexible DAY-BRITE Recessed Troffers

Your ceilings come to life—aglow with functional patterns of light—when you make the lighting system an integral part of your overall plan with these optically-engineered recessed troffers.

Day-Brite offers the most complete line of troffers to give you a highly flexible and efficient system of structural lighting effects:

(1) Lateral Louvers (2) Boxco Louvers (3) Diffusing Glass Panels (4) Holophane Controlens

- All can be used as single units or in continuous runs.
- All available in two mounting types: Snap-in troffers for Tee-Bar supported acoustical ceilings; flanged troffers for other acoustical and plaster ceilings.
- A completely new series of improved plaster frames developed exclusively by Day-Brite.
- Designed for 1, 2 or 3 40-watt lamps.

May we send Bulletin 20-A with complete simple pricing information, installation details and photometric data?

IT'S EASY TO SEE WHEN IT'S
DAY-BRITE
Lighting

Day-Brite Lighting, Inc., 5465 Bulwer Avenue, St. Louis 7, Mo.
Nationally distributed through leading electrical supply houses.
***In Canada:* address all inquiries to Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.**

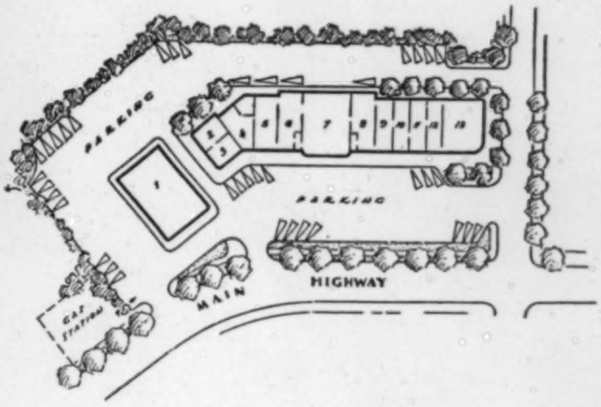
390

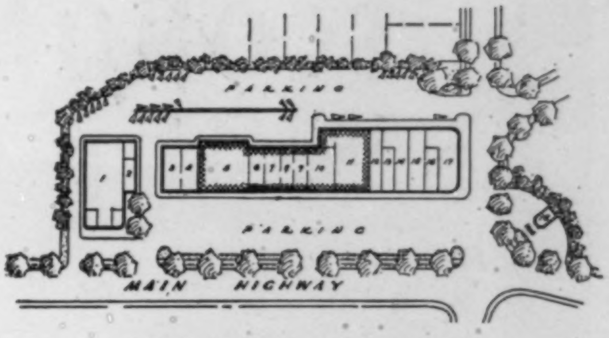
ARCHITECTURAL ENGINEERING
TECHNICAL NEWS AND RESEARCH

NEIGHBORHOOD SHOPPING CENTERS

(*Continued from page 123*)

(Data from "The Community Builders Handbook," courtesy Urban Land Institute.)


PARKING
PARKING
MAIN
HIGHWAY
GAS STATION


PARKING
PARKING
MAIN HIGHWAY

(Plan shows two stages of construction. The shaded portion is the initial installation.)

Shopping Center for 500 to 700 Families

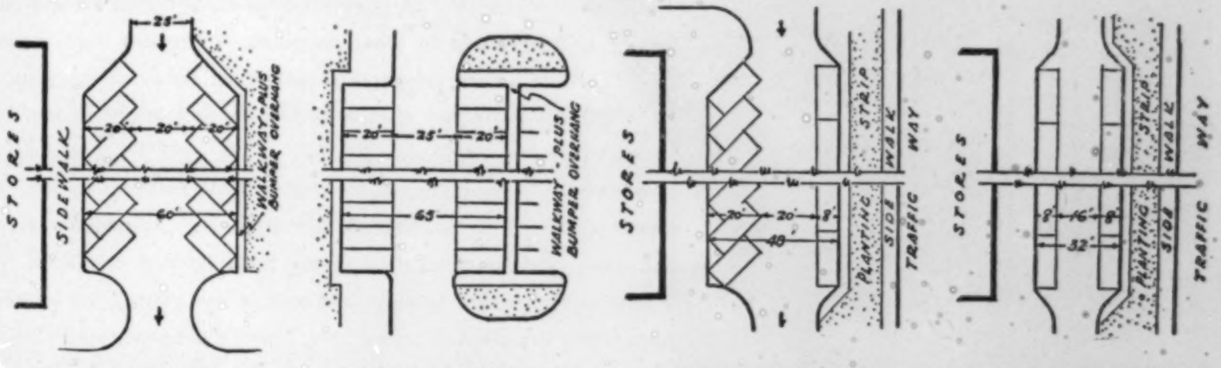
(1) market, (2) shoe repair, (3) barber shop, (4) beauty shop, (5) ladies wear, (6) grocery store, (7) variety store (8) delicatessen, (9) bakery, (10) cleaner and laundry, (11) radio and electrical shop, (12) florist, and (13) drug store

Shopping Center for 750 to 1000 Families

(1) theater, (2) barber shop, (3) radio and electrical, (4) liquor store, (5) supermarket, (6) gift shop, (7) beauty shop, (8) ladies wear, (9) haberdashery, (10) 5 & 10, (11) drug store, (12) shoe store, (13) cleaner and laundry, (14) bakery, (15) independent grocer, (16) books, (17) restaurant, and (18) gas station

SMALL PARKING AREA LAYOUTS

(for individual stores or small parking centers without large parking areas)


25'
STORES
SIDEWALK
20'
20'
20'
60'
WALKWAY PLUS BUMPER OVERHANG
20'
35'
20'
65'
WALKWAY PLUS BUMPER OVERHANG
STORES
20'
20'
8'
48'
PLANTING STRIP
SIDE WALK
TRAFFIC WAY
STORES
8'
16'
8'
32'
PLANTING STRIP
SIDE WALK
TRAFFIC WAY

A 45-Degree **B 90-Degree Right-Angle** **C In Restricted Widths** **D In Narrow Widths**

	A		B		C	D
Width of Car Stalls	8′-0″ or 9′-0″		8′-0″ or 9′-0″		8′-0″ or 9′-0″ (45-deg. stalls) 20′-0″ (parallel stalls)	20′-0″ (parallel stalls)
No. of Cars Per 100 Ft. of Curb	9	8	12	11	9 8 (45-deg. stalls) 5 (parallel stalls)	5
Curb Occupied Per Car	11′-4″	12′-9″	8′-0″	9′-0″	see A and D	20′-0″
No. of Cars Per Acre, Excluding Approaches	130	116	168	148	126 117	136

THE DIVIDING LINE BETWEEN
TRUE AND FALSE
ECONOMY...

MB Co
MBCo
MBCo
MBCo
MB Co
MUELLER BRASS CO—PORT HURON MICH—STREAMLINE—MUELLER BRASS CO—PORT HURON MICH—STREAMLINE—MUELLER BRASS CO—PORT HURON MICH—STREAMLINE

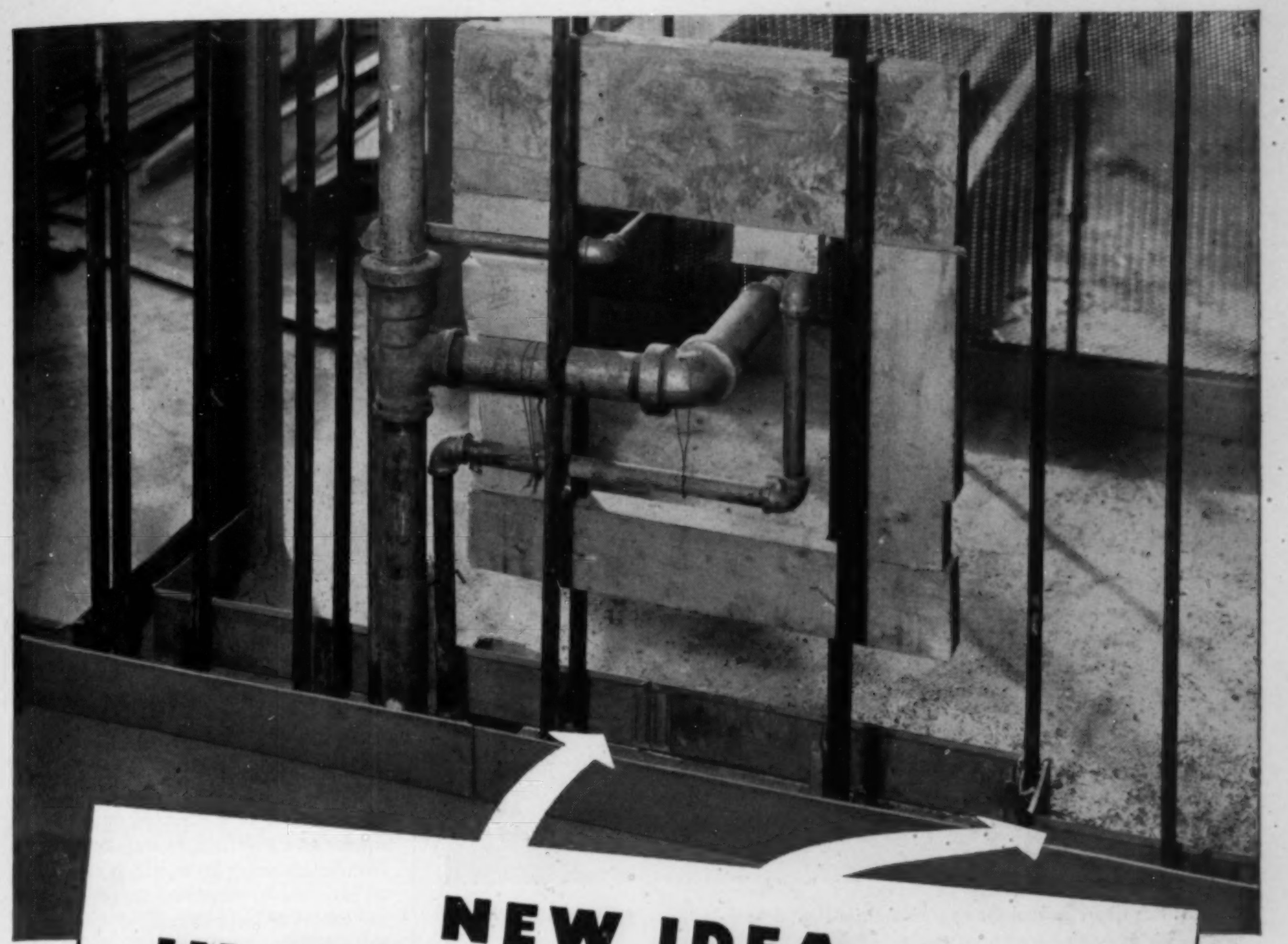
IS NOT ALWAYS APPARENT!

Low initial cost should never be the only reason for specifying or recommending a product. True economy considers the service rendered and its replacement cost. A piping system should render efficient and long-lasting service to be a true economy for your client.

Streamline Copper Pipe and Solder Type Fittings are made from copper and bronze which have long been recognized as the most durable of metals for piping and a multitude of other purposes. There are many cases on record where copper has lasted for hundreds of years and, with the exception of a slight tarnish, remain just as serviceable as when first installed.

Streamline Copper Pipe connected with Streamline Solder Fittings cannot rust and is unaffected by vibration. Streamline affords a permanently reliable conducting system with the first cost little, if any, higher than materials that corrode and leak a few years after installation. In the plans which are on your board now, provide efficiency and long life in the piping system by writing in Streamline Copper Pipe and Solder Fittings.

STREAMLINE
TRADE MARK REG. U. S. PAT. OFFICE
COPPER PIPE AND FITTINGS
MUELLER BRASS CO.
PORT HURON, MICHIGAN



NEW IDEA IN WALL CONSTRUCTION

saves money...saves space

YOU'LL save money and space for your clients when you *combine two* great wall systems...the Gold Bond Hollow Wall and the Gold Bond 2 inch Solid Partition.

1. The GOLD BOND TWO-INCH SOLID PARTITION with flush type metal base *saves up to 7%* of the living or working space wasted by old-type thick walls. And with no loss of sound reduction or crack resistance, this metal lath and gypsum plaster partition also means less weight and faster construction. Now, what about walls that must provide for piping and ducts?

2. That's where the GOLD BOND HOLLOW WALL SYSTEM comes in. This system employs the use of two separate units which may be spaced any distance apart to meet specifications for pipes, etc., with no ties or bridging. The illustration above shows the Two-Inch Solid Partition used in combination with the Hollow Wall system to meet all job conditions. (Wood nailing supports for the fixtures are wired to the channels.)

Combine two *good* ideas and you get a *better* idea... and at no higher cost! You'll find Gold Bond Partition Systems listed in detail in our section of Sweet's, or write for descriptive catalogs.

You'll build or remodel better with

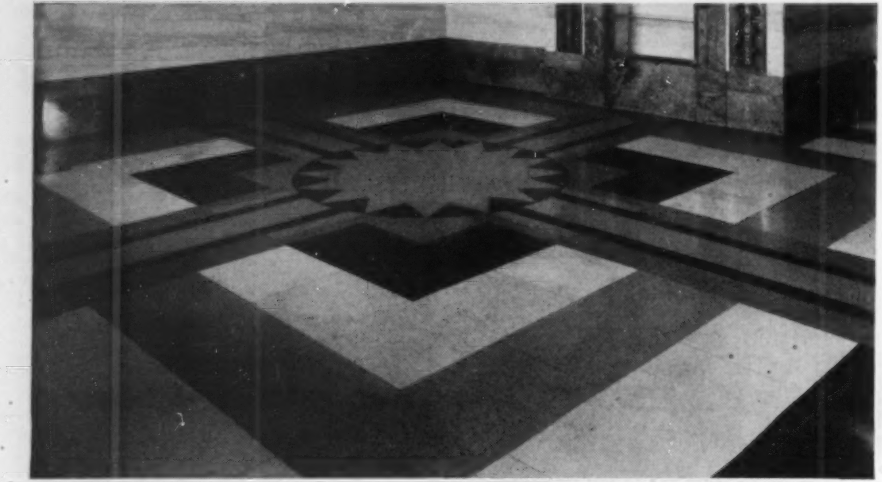
Gold Bond

NATIONAL GYPSUM COMPANY

BUFFALO 2, NEW YORK

Over 150 Gold Bond Products including gypsum lath, plaster, lime, wallboards, gypsum sheathing, rock wool insulation, metal lath products and partition systems, wall paint and acoustical materials.

Just as
fine chinaware patterns
are set against WHITE...



Terrazzo Floor: Samuel Gompers Industrial High School for Boys, Bronx, New York.

Concrete craftsmen choose
Atlas White Cement

Delicate colors and intricate patterns of fine chinaware stand out most strikingly against a white background. So, too, a matrix of Atlas White Cement sets off better the color values of pigments and aggregates in Terrazzo, Stucco, Cement Paint and Architectural Concrete Slabs. Such a background has the uniform clarity to complement the desired color overtones, whether in contrast or blend.

Atlas White complies with Federal and ASTM specifications for portland cement. It has the same advantages for concrete and is used in the same way. Atlas White concrete gives a clean, fresh appearance. Cleaning is easy. Maintenance costs stay low.

For further information on the uses of Atlas White Cement, see SWEET'S Catalog, Sections 12B/7 and 13B/7, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, New York.

AR-C-21

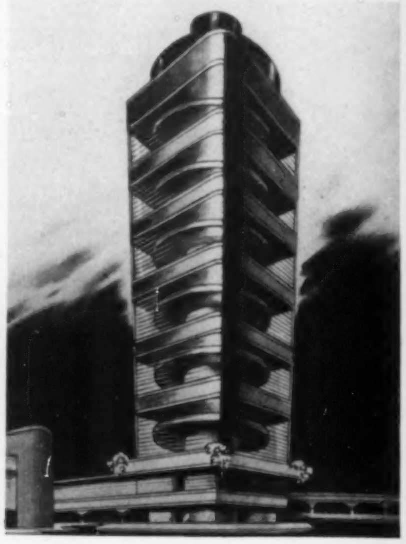
FOR BEAUTY AND UTILITY
ATLAS WHITE CEMENT
FOR TERRAZZO, PAINT, SLABS, STUCCO

A UNIVERSAL ATLAS PRODUCT

"THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries*
Sunday Evenings—ABC Network

THE RECORD REPORTS

(*Continued from page 16*)



15-story Wax Research Tower designed for S. C. Johnson, Inc., by Frank Lloyd Wright, under construction at Racine

The tower is a compact stack 40 ft. square and 156 ft. high, supported by a circular masonry stem which extends 50 ft. into the ground and to which floors are connected at each of the 15 levels of the building. Walls are of tubular glass with intermediate narrow bands of masonry at the main floor levels. Alternating with the main floors are circular floors 38 ft. in diameter, contained entirely within the curtain walls. The building will be free-standing, adjacent to the present Administration Building.

Publications Offices

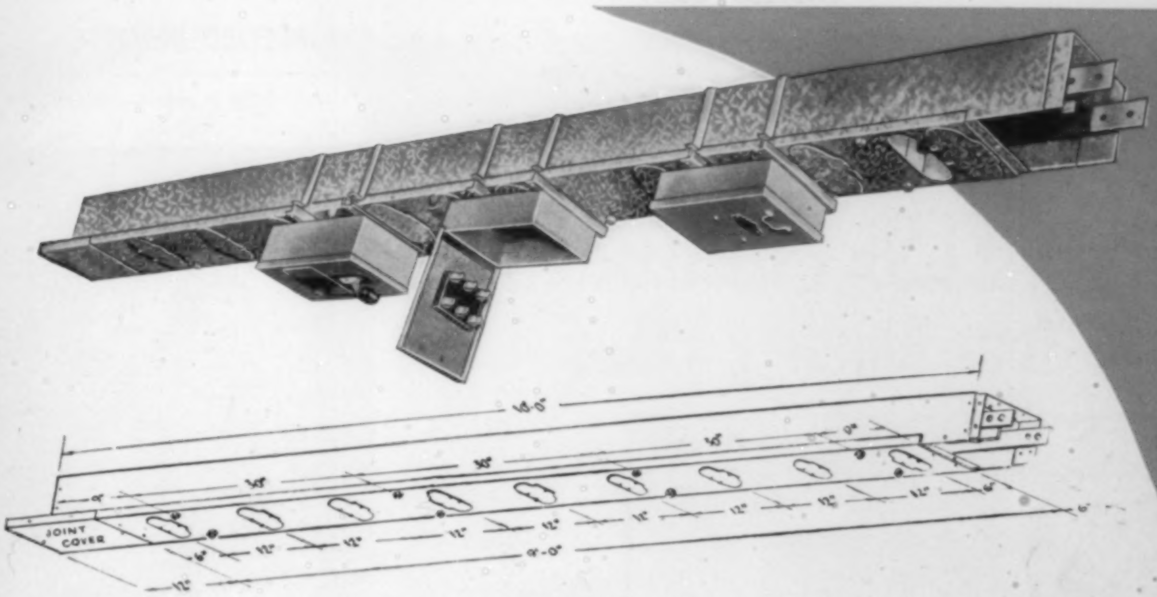
Now nearing completion on East 12th Street, New York City, is the new Fairchild Publications Building, the first six floors of which have been joined to the company's present building on East 13th Street.

Of steel and reinforced concrete construction, the building features unbroken rows of windows across the entire 100-ft. expanse of the front and on the free sides. The 12-story building has six tiled terraces, to the rear of the second, fifth, seventh, ninth and eleventh floors, and in the front on the 10th floor.

The facade is of Indiana limestone and Vermont marble; the exterior of the street floor is faced with green marble, of the upper floors with white. Entrance doors are herculite glass.

Among the features of the building are an off-the-street, 50-ft. loading platform and covered driveway to accommodate four trucks; an automatic conveyor to carry mail bags and newspapers from the mail room adjoining the press

(*Continued on page 130*)



Plugin FA BUSDUCT

Provides PLUGIN OUTLETS Every Foot of the Way

More and more industrial plants are replacing their costly, complex and outmoded electrical systems with the new, economical and flexible PLUGIN FA BUSDUCT system.

By providing convenient Plugin outlets every foot of the way, Plugin FA Busduct makes it possible to move and relocate machinery at will . . . eliminates costly temporary connections and long, expensive lead-ins . . . greatly reduces maintenance costs . . . and saves thousands of man hours normally lost each year.

You'll find this economical, flexible system of power and light distribution helps speed production by providing a Plugin outlet within convenient radius of your needs . . . always.

Available in standard 10-foot lengths in capacities from 250 to 1000 amps. for 575 volts AC or less, with multiple outlets for any of the following Plugin Units:

FA SHUTLBRAK—for quick make and break, heavy-duty operations; FA KLAMPSWITCHFUZ—splendid for disconnect service; and FA CIRCUIT BREAKER—for automatic, thermal-magnetic overload protection.

For further details, write for our new Bulletin No. 701.

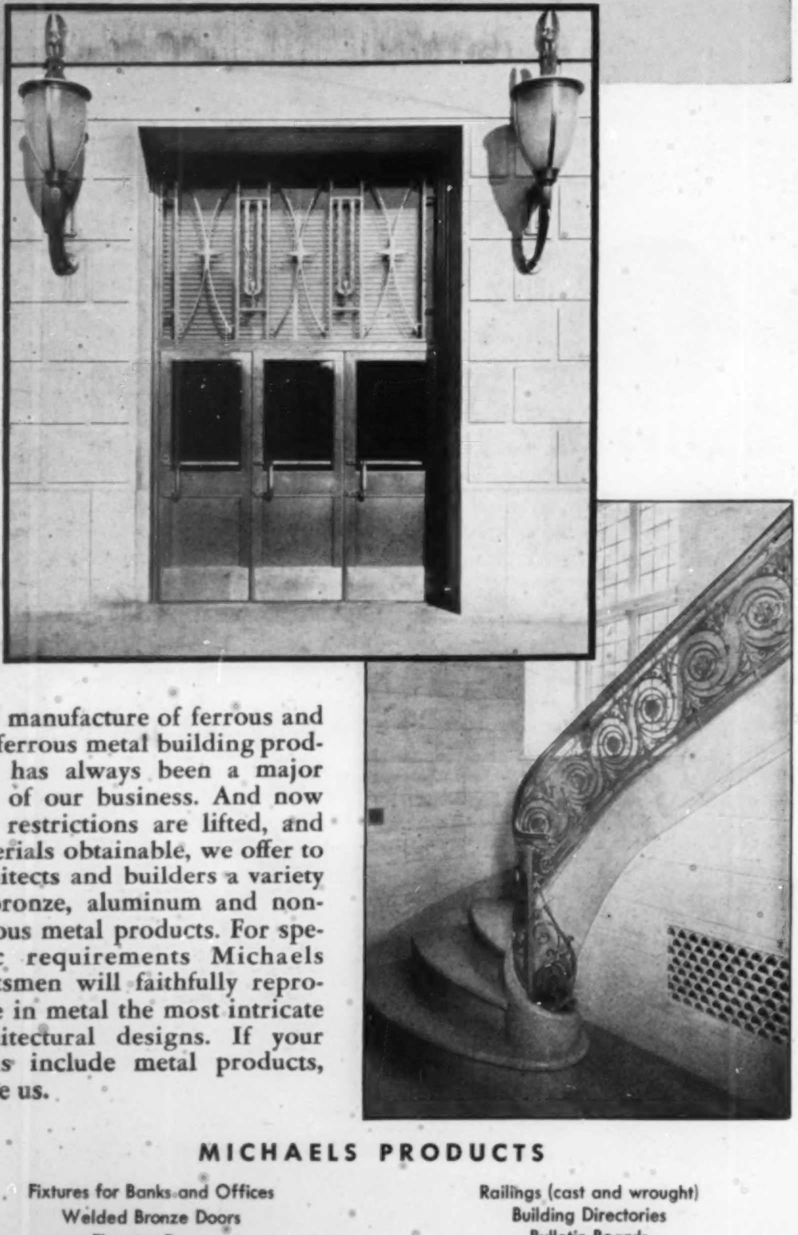
FA TRADE MARK

Frank Adam Electric Co.

ST. LOUIS 3, MISSOURI

Makers of BUSDUCT • PANELBOARDS • SWITCHBOARDS • SERVICE EQUIPMENT • SAFETY SWITCHES • LOAD CENTERS • QUIKHETER

Don't Overlook
MICHAELS PRODUCTS
in Your Building Plans



The manufacture of ferrous and nonferrous metal building products has always been a major part of our business. And now that restrictions are lifted, and materials obtainable, we offer to architects and builders a variety of bronze, aluminum and nonferrous metal products. For specific requirements Michaels craftsmen will faithfully reproduce in metal the most intricate architectural designs. If your plans include metal products, write us.

MICHAELS PRODUCTS

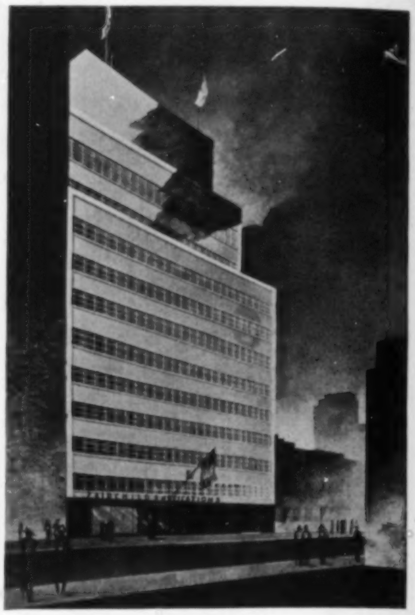
Fixtures for Banks and Offices
Welded Bronze Doors
Elevator Doors
Elevator Enclosures
Check Desks (standing and wall)
Lamp Standards
Marquise
Tablets and Signs
Name Plates
Astragals (adjustable)
Railings (cast and wrought)
Building Directories
Bulletin Boards
Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
Cast Thresholds
Extruded Thresholds
MI-CO Parking Meters
Museum Trophy Cases

THE MICHAELS ART BRONZE COMPANY, 234 Scott St., Covington, Ky.

Member of the National Association of Ornamental Nonferrous Metals Manufacturers

THE RECORD REPORTS

(*Continued from page 128*)



The new Fairchild Publications Building New York, now nearing completion. Harrison, Abramovitz and Wiggins, Architect

directly to the trucks at the loading platform; and a pneumatic newsprint drop, built into the loading platform, which unloads four 70-in. rolls of newsprint per minute from the truck level to the basement. Architects for the building are Harrison, Abramovitz and Wiggins.

Assembly Hall and School

John C. Ehrlich of Geneva, N. Y., has been retained to design plans for a new assembly hall and school building for the Newark State School, Newark, N. Y. The proposed building, which will cost an estimated $628,000, is part of a contemplated $3,250,000 building program planned for the Newark School, one of five institutions operated by the State Department of Mental Hygiene for the treatment, care and training of mentally defective persons. Other construction will include four one-story infirmary buildings to be designed by deYoung and Moskowitz of New York.

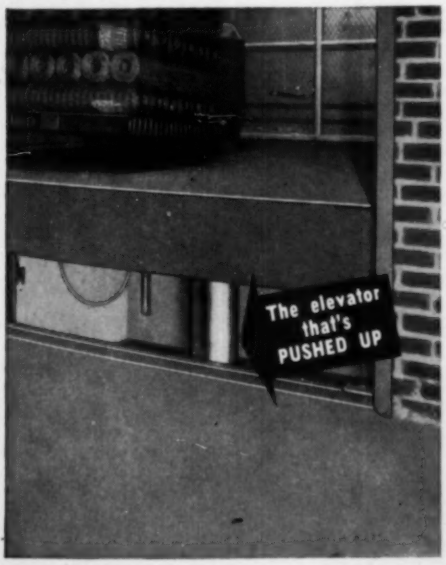
The new school section will include classrooms and kindergarten, industrial training shops, domestic science, speech correction and music rooms, and a library. Also to be provided are a gymnasium, with locker and dressing rooms, and an auditorium seating 865 on the main floor and 100 in the balcony. The auditorium will have a stage and dressing rooms and a motion picture projection room. A separate employees recreational section will have four bowling alleys, game rooms and lounge.

(*Continued on page 132*)

Solution to an Elevator Problem!

SPECIFY OILDRAULIC ELEVATORS

When power trucks are used for elevator loading



In designing new buildings or modernizing old ones, it is important to select elevators built to take the shock loads imposed by power trucks which are now universally used in handling freight.

OILDRAULIC TAKES THE LOAD

Oildraulic operation is perfect for this type of service. The elevator and its load is positively supported on the "oil locked" hydraulic jack. This takes the load off the building structure, makes it possible to use lighter sidewall and shaftway construction. Also, it means accurate landing stops . . . the elevator car "evens up" with the floor and holds its position. Jolts and jars caused by power truck loading are reduced to a minimum.

CAR CONSTRUCTION IS RUGGED

Car construction on an Oildraulic Elevator is rugged with a strongly reinforced sling and platform. Built to take hard wear, it will withstand off-center loading and rough service.

OTHER IMPORTANT ADVANTAGES

Other advantages of Oildraulic Elevators are: (1) No costly, unsightly penthouse required as the car is pushed up, not pulled up. (2) Compact electric power unit can be located under a stairway or in any convenient space at any landing, as pictured above. (3) Operating cost is low . . . power used only on rise, descent by gravity.

For data to help solve your elevator problems

ROTARY LIFT CO.
1006 Kentucky, Memphis 2, Tenn.

Send Catalog RE-301 (AIA File 33) to:

Name..

Address..

City & State..

Rotary* OILDRAULIC* ELEVATORS

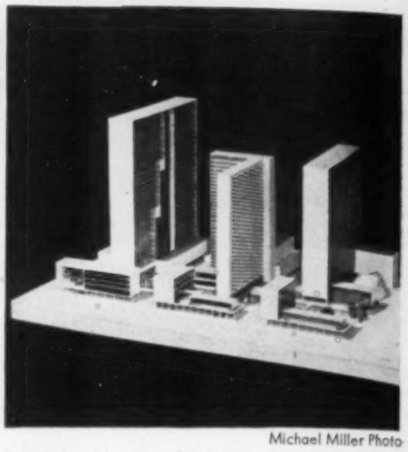
*Reg. U. S. Pat. off.

THE RECORD REPORTS *(Continued from page 130)*

STUDENTS' EXHIBIT

Featured at the Architectural League of New York last month was an exhibition of representative student work from 35 architectural schools and departments in 23 states. Designed "to acquaint architects, students and city planners with the various types of professional training now offered in American schools," the exhibit will be shown throughout the country.

Each school's display not only presented a cross-section of student work but included a statement by the dean or department head outlining the objectives of the school. The displays consisted of wall panels and scale models. In addition there were two special panels: "A Short History of Architectural Education in America," by Talbot F. Hamlin, of Columbia University; and "A Critique of the Exhibition," by Thomas H. Creighton, editor of *Progressive Architecture.*



Michael Miller Photo

Model of redevelopment plan for New York City's Avenue of the Americas, prepared by Yale University architectural students and exhibited by the Architectural League of New York. Left to right: Mexican Building, designed by Lloyd Flood; Argentine Building, by Paul Webb, Jr.; Brazilian Building, by John Caproni

One of the most interesting of the student projects was a plan to redevelop a blighted section of New York — the area along the Avenue of the Americas between 42nd Street and Central Park South. Proposed by a group of Yale University architectural students in conjunction with Edward D. Stone and the Avenue of the Americas Association, the plan was presented as a model (see photo above), representing a typical unit of the redevelopment.

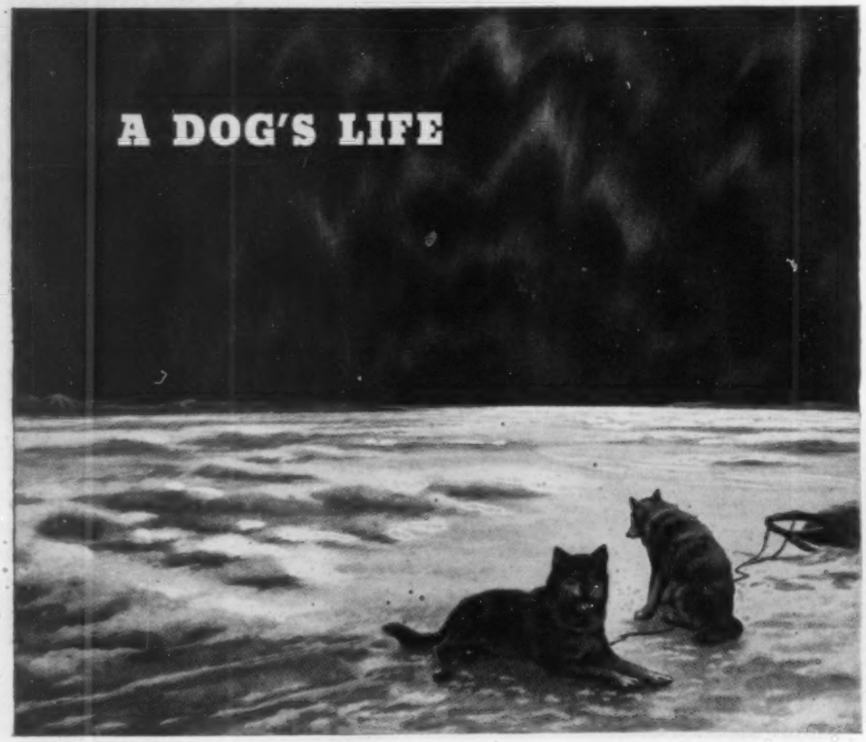
According to the plan, consulates of the American nations would be located in low buildings along the avenue. Tower buildings containing offices, hotels, apartments, etc., would be the principal revenue-producing structures. A landscaped pedestrian promenade would be located parallel to and west of the avenue, would pass beneath the streets. Shops, outdoor cafes, theaters and exhibit areas would be located along the promenade, as well as entrances to the tower hotel and office building.

"IDEA HOUSE" SHOWN

Now on view at the Walker Art Center, Minneapolis, is "Idea House II," a completely equipped display dwelling designed by William Friedman and Hilde Reiss; Malcolm E. Lein, associate.

Co-sponsored by the Home Institute of the Northwestern National Bank, the house cost about $21,000 to build, is planned to provide comfortable living space for a family of four (parents and two children) within 19,000 cu. ft. Among its features: split-level planning adapted to a sloping site; solar orientation; kitchen an integral part of the living room; a children's apartment with

(*Continued on page 134*)



Not many dogs, and fewer humans, manage to enjoy life in the frigid regions around the Pole. Those whose business takes them there derive cold comfort from the piercing frost of the desolate Arctic ice-cap.

Those whose business is in the refrigeration, cold storage, or frozen food lines in these temperate parts, however, must create cold artificially . . . and, if they are wise, they safeguard it with Jamison Cold Storage Doors. The prestige of the Jamison name has been earned by half a century of satisfactory service, in all manner of cold storage installations, in all parts of the world. In a field where failure is costly, Jamison-built Doors have consistently proved their efficiency, dependability, and economy.

Jamison, Stevenson, Victor, and NoEqual Doors, and related products, comprise the standard Jamison line . . . with special types built on order. Full information about Jamison products and the Jamison way of doing business . . . with address of nearest branch . . . will be sent upon request. Write Jamison Cold Storage Door Company, Hagerstown, Md.

Branches in Principal Cities, Coast to Coast

JAMISON
COLD STORAGE DOORS

Welded Design Eliminates Dead Weight in 4-Story Structure

By Roy L. Brown, Partner
Brown's Machine Shop, Sedalia, Mo.

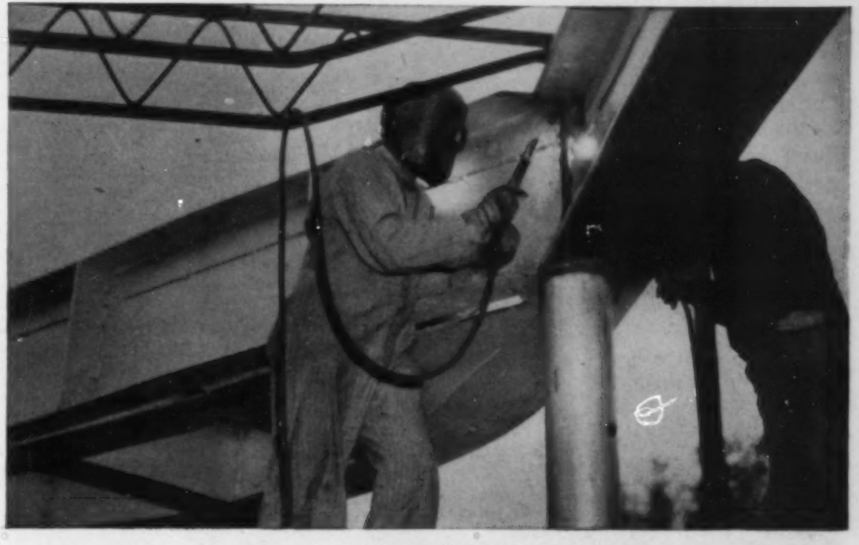


Fig. 2. Two welders weld heavy beams simultaneously to avoid distortion.

THE all-welded design of our new four-story building now under construction has eliminated structural dead weight and thus increased each floor's capacity to carry heavy machinery loads. The reduction in steel and speedier erection with arc welding have also cut construction costs.

We designed the 92 x 120′ building for our own use as an automotive machine shop. All welding was done with "Fleetweld 47" electrode.

Double pipe columns reinforced with concrete are used throughout and are reported to be superior to conventional upright floor supports. Rising from the reinforced concrete basement floor to support the first floor are columns made of 10″ steel pipe with 6″ pipe inside, both filled with concrete and welded to a 2″ bearing plate.

ALL-STEEL FLOOR

Fig. 1 shows a similar 10″ double pipe columnar support for the second floor being welded to the top flange of a 24″ I beam at the first floor level. This column contains a 4″ pipe. The columns for upper stories are 7″ pipe with 4″ pipe inserted. In Fig. 1 bar joists have been welded to the I beams. Steel deck flooring was later welded to the bar joists. During construction this floor supported a truck and hoist to raise a 40-ft. beam weighing 4 tons.

Fig. 2 shows a vertical weld being made to join a curved lintel section to a straight lintel. Two welders are simultaneously welding on each side of the joint to maintain proper alignment. This procedure was used for welding all large beams. The curved lintel was shop-fabricated and hoisted into position for welding to straight lintels 80′ and 35′ long.

Fig. 3 shows the framework for the elevator penthouse and loading dock. Here 12″ door channels were formed from ¼″ steel plate and welded to a 13″ Z-bar, and 6″ x 6″ x ⅜″ angles were welded to the Z-bar to complete the lintel over the loading dock door.

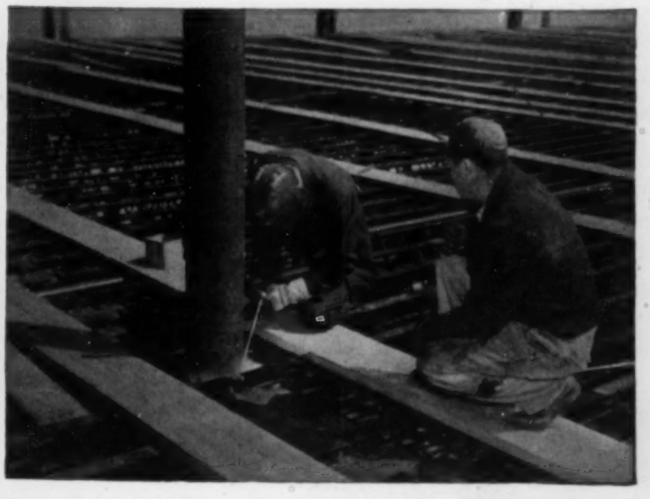


Fig. 1. Welding pipe column to first floor I beam. Column has a smaller pipe and concrete inside.

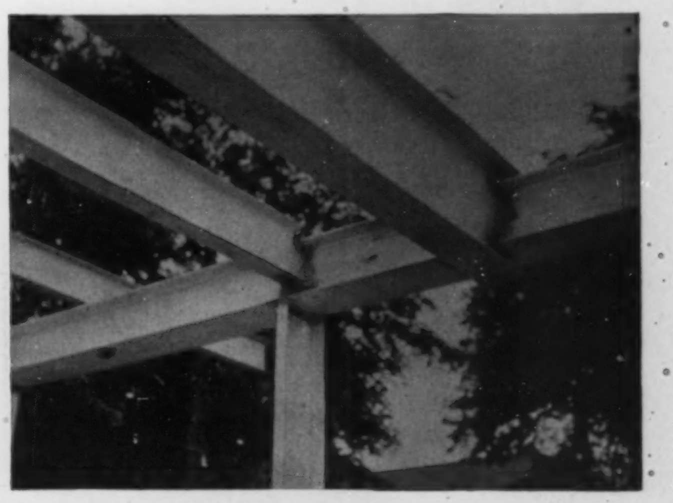


Fig. 3. Framework for loading dock contains channels, I beams, angles and Z-bar.

The above is published by LINCOLN ELECTRIC in the interests of progress. Structural Design Studies are available free to architects and engineers. Write The Lincoln Electric Company, Dept. 266, Cleveland 1, Ohio.

THE RECORD REPORTS

(Continued from page 132)

two sleeping and study alcoves opening from playroom; prefabricated bathroom unit; built-in prefabricated storage units throughout the house.

Exterior is 10-in. vertical redwood siding, treated with an oil preservative to protect its color. Trim is white; gutters, roof edge and pipe columns are painted aluminum. The living room has a dark green asphalt tile floor, one wall and ceiling of redwood; fireplace wall is of cement block.

This is the second Idea House built by the Walker Art Center, the first, shown in 1941, attracted 56,000 visitors. Plans and models for six others are now being exhibited. The Art Center proposes to sponsor the erection of all eight houses in a suburban area of Minneapolis, exhibit them for several months, and then sell them. Construction is tentatively planned for the spring of 1948. Meanwhile, Idea House II will remain on view at the Center.

HOME OWNERS PLAN MEETINGS

The Home Owners Foundation is planning a series of countrywide meetings "to establish a legislative program to abolish socialistic housing schemes and bureaucratic control of the nation's homes," Dr. Joseph W. Seay, Foundation director, has announced.

The Foundation, which now has 60,000 members, will seek in 1948 a membership of two million, said Dr. Seay, "in order that the 21 million home owners of the nation may have an adequate voice and play their part in forming national policies. Arthur W. Binns of Philadelphia is president of the organization.

Among the legislative proposals to be considered at the meetings are:

1. Deduction from taxable federal income of a taxpayer all principal payments on his home purchases, as well as interest payments.
2. Amendment to the Constitution which would give every home owner state tax exemption on the first $5000 of value of his home from local as well as all other taxes.
3. Doubling of present deductions permitted for wife and dependent children to the heads of families in the federal income tax.
4. Seek a ceiling on real and property tax in every state.
5. Seek legislation which will compel the federal government to pay local taxes on its properties where local government renders service to them.

LEGION STUDIES HOUSING

The American Legion intends to make the housing problem one of its major interests in the coming year, promises the Legion's National Executive Committee.

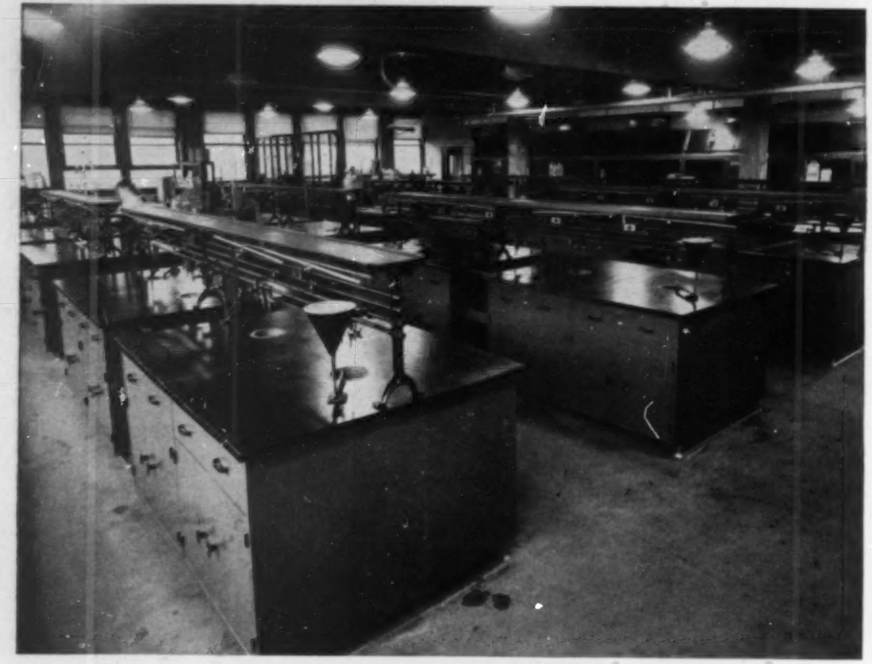
As a step in that direction, the Executive Committee at its late-October meeting passed a resolution urging Congress to make an immediate investigation to determine "whether Communists have infiltrated into administrative positions under the Federal Public Hous-

(Continued on page 136)

SIDNEY L. STRAUSS

The sudden death of Sidney L. Strauss, New York architect, on October 24 at the age of 47 came as a shock to his many friends. Mr. Strauss had been attending the meetings of the New York Society of Architects, of which he was convention chairman, and had seemed in good health.

A native of New York, Mr. Strauss was a practicing architect for 20 years, specializing in the design of industrial and business structures. He was a member of the American Institute of Architects and a former president of the New York Society of Architects.



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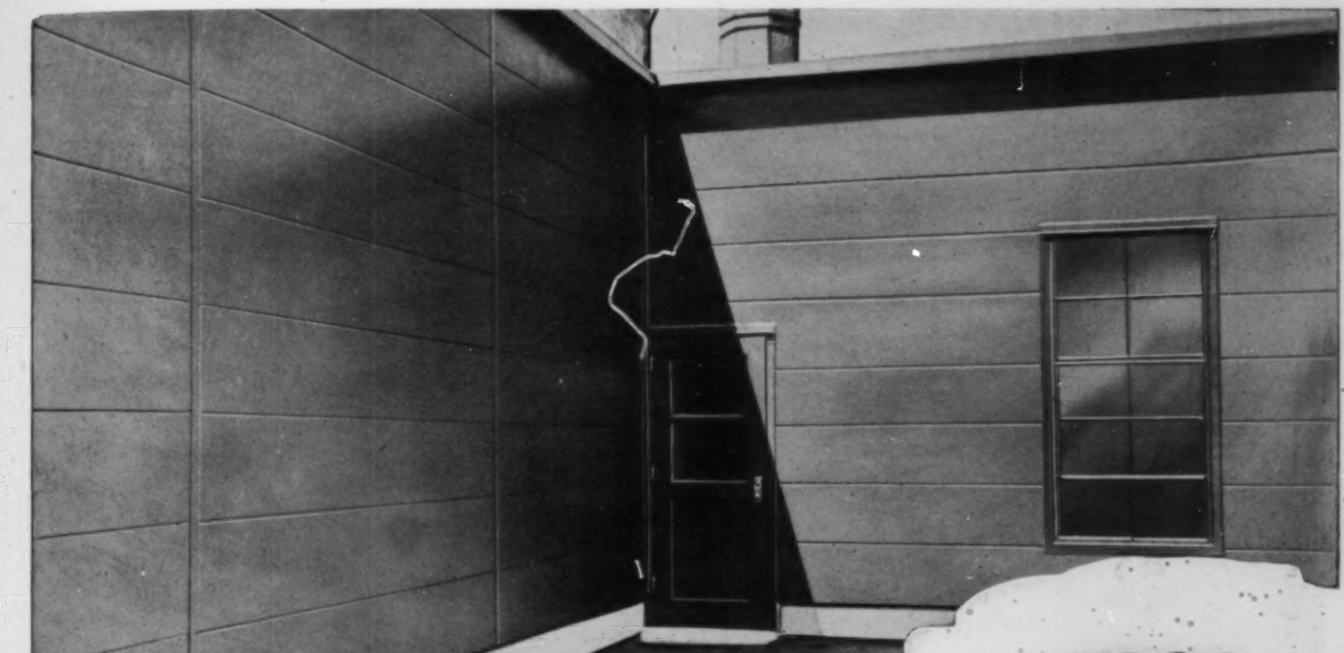

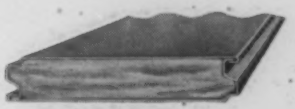

TYPE C FOR WALLS. Composed of two metal members pressed together, with felt at each side to prevent metal-to-metal contact. Filled with insulation at the factory. Standardized in 3" depth and 16" width, in 18 gage painted steel or 16 B & S gage aluminum.

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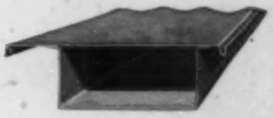
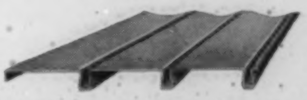
It *can* be done. Where do the savings come from? From the use of steel panels that are fabricated and insulation-filled at the factory . . . from the speed and ease with which men, without special skill or special tools, build up the wall with large-area sections. Less handling. No waiting for drying. Naturally, numerous openings require additional framing and fitting costs.

Starting right after the structural steel work, the building can quickly be enclosed with Fenestra Building Panels. Type C for insulated walls . . . Type D to get floors down fast so construction can proceed . . . Holorib Roof Deck to get under cover faster whatever the weather.

Fenestra Metal Building Panels are made by America's largest steel window producer and the originators of insulated steel roof deck. You'll find full information in Sweet's Architectural File (Section 3c-1). Or mail the coupon below. And if we can help you apply these modern metal panels to your building needs, call us.



TYPE D FOR FLOORS. Box beam formed by welding together two steel sections. Side laps interlock to form continuous flat surface. Cover plates available for open cells to provide two flat surfaces. Standardized in 16" width. Depth 1½" to 9". Gages 18 to 12.



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ing Administration," and if they have to dismiss them immediately.

Preliminary announcement was made at the Executive Committee meeting of a Legion housing plan which would ask Congress for legislation to: (1) permit veterans to form non-profit corporations in groups of five or more; (2) finance housing through the sale of government-guaranteed bonds bearing a low interest rate; (3) construct or purchase housing to be sold to veterans; and (4) construct or purchase and operate housing to be rented to veterans.

MINORITY HOUSING

In order to assist all state and district directors in obtaining greater production of housing for minority groups, racial relations advisers have been appointed by the FHA and are at work throughout the country. The Racial Relations Division of the HHFA will cooperate with them.

The advisers are: Clarence R. Johnson, with headquarters in New York City, for Zone 1 (Northeastern states); Maceo Smith, with headquarters in Dallas, and Al Thompson in Atlanta, for Zone 2 (Southern states); DeHart Hubbard, Cleveland, for Zone 3 (North Central states); and Edward Rutledge, Los Angeles, for Zone 4 (Mountain and Pacific states).

These advisers are under the direction of zone commissioners and work closely with state and district directors in bringing the housing needs of all minority groups to the attention of private builders and lenders. They will also maintain contact with minority groups in their respective areas.

BUILDING CODE FOR SMALL JURISDICTIONS

A new "Uniform Building Code for Small Jurisdictions" — an abbreviated form of the basic "Uniform Building Code" — was announced by the Uniform Building Code Association at the annual meeting of the Pacific Coast Building Officials Conference late in October.

The new code is designed for jurisdictions of under 10,000 population, and to apply only to buildings not over 7500 sq. ft. in ground floor area. It requires that all other structures comply with the latest edition of the parent code.

The small code will be subject to study for a year before it is published. It will accompany the 1949 edition of the Uniform Building Code, to be released March 1, 1949.

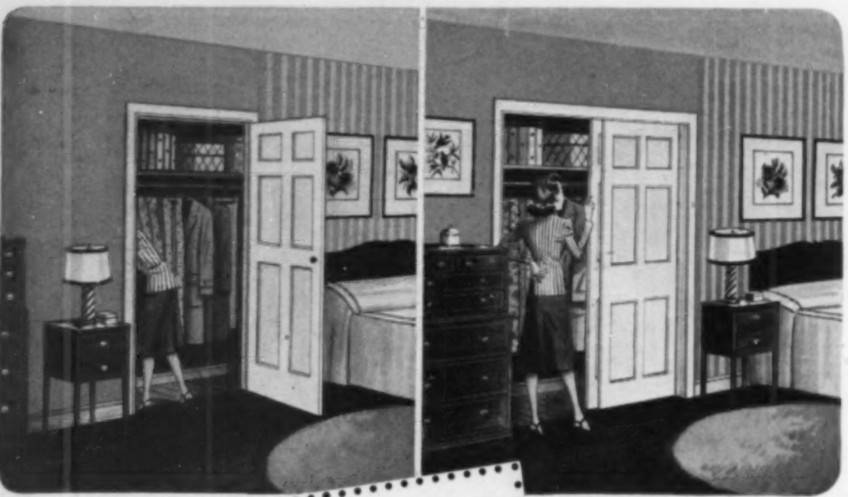
NEW OWNER-ARCHITECT AGREEMENT FORM

A standard form of agreement between owner and architect has been announced by the Architects Legal Form Co., 4900 Euclid Bldg., Cleveland 3, Ohio. Carefully worked out for maximum clarity and brevity, it includes a number of new provisions and covers such items as the architect's extra services, his compensation and its payment, and postponement of the project or services.

SYMPOSIA BEING HELD

The Pennsylvania Society of Architects is holding a series of professional symposia in Philadelphia, Harrisburg and Pittsburgh during the winter. The first was held last month, with Lessing W. Williams, Fred Severud and Judson F. Vodges, Jr., speaking on materials. School and educational buildings will be the topic for the second, scheduled for Philadelphia on January 3, Harrisburg on January 10, and Pittsburgh on the 17th. Speakers will be Drs. Engelhardt, Johanna Hopkins and Ward I.

(Continued on page 138)



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WITH VANISHING DOORS

Same bedroom with single hinged closet door and with parallel sliding doors. Direct access to either half of closet is possible as each sliding door opens to opposite side of door frame. Note added floor space available with sliding doors.

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And there's an important *plus* advantage to sliding doors—no floor space wasted by the swinging arc of hinged doors. Furniture, lighting fixtures, rugs and pictures can be conveniently and correctly placed without getting "behind a door."

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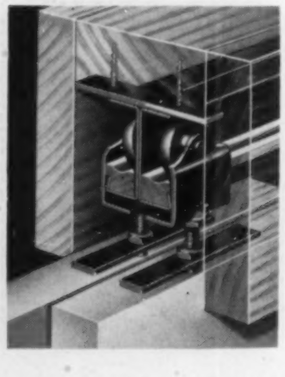
Sliding doors installed with quiet, smooth, trouble-free Richards-Wilcox No. 719 Sliding Door Hangers and Wood Lined Track can simplify home planning, provide more usable floor space and make living easier. Get all the facts . . . call your nearest R-W office. Free consultation available.



R-W No. 719 Sliding House Door Hanger and Wood Lined Track, showing application of hangers and track to doors and header.

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Anemostat engineers are air-diffusion specialists. Backed by 25 years of experience, they can capably solve difficult air-diffusion problems. A consultation can be arranged today. There is no obligation.

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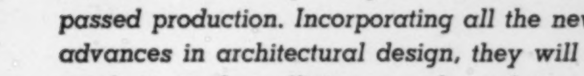

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Miller. The last session is planned for March 6, 13 and 20 in Philadelphia, Harrisburg and Pittsburgh respectively. The subject will be office practice; speakers will include George F. Denniston and Eugene Klaber.

N. Y. ARCHITECTS MEET

Four panel discussions, addresses by leaders in the construction field, and exhibits of architects' work and of building products highlighted the annual convention of the New York State Association of Architects held in New York City October 22–24. Keynote throughout was the close tie-in between the problems of the architect and the general economy and social welfare of the public.

Speakers and their subjects included: Max Abramovitz, Deputy Director of Planning, United Nations, "The World Capitol"; Thomas S. Holden, President, F. W. Dodge Corporation, "Significant Trends in Construction"; Arthur C. Holden, F.A.I.A., "Who Decides What's to be Built?"; David S. Miller, President, Producers' Council, "Architect-Producers Relations"; Ely Jacques Kahn, "Industrial Buildings"; and Col. L. E. Dostert, U.N., and Clyde Fitch of the International Business Machines Corp., "Simultaneous Interpretation."

Other speakers were Kenneth K. Stowell, Editor-in-Chief, ARCHITECTURAL RECORD; Edward A. Salmon, Chairman, New York City Planning Commission; Roger Allen of Detroit, who served as toastmaster at the annual banquet; and Douglas William Orr, President, A.I.A.

Chairmen of the panel discussions were: Schools, Reginald E. Marsh; Hospitals, Aaron N. Kiff; City Planning, George Bain Cummings; and Housing, C. Storrs Barrow.

In honor of Sidney L. Strauss, A.I.A., New York architect and chairman of the convention, who died suddenly following the opening day's sessions, the convention was adjourned at the luncheon meeting on October 24.

COMPETITION ANNOUNCED

An international competition for the design of low-cost furniture has been announced by the Museum of Modern Art and Museum Design Project, Inc., a non-profit organization set up by representatives of the trade. Open to individual designers of all countries and to selected research teams consisting of technological laboratories working in collaboration with outstanding designers, the competition offers prizes and grants totaling $50,000. For further information and a copy of the program, address Museum Design Project, Inc., 11 W. 53rd St., New York 19, N. Y.

AT THE COLLEGES

Department Reorganized

The Department of Architecture at Yale University has been reorganized as the first project of the newly created Division of the Arts at the University, Professor Charles Sawyer, Division director, has announced. Harold D. Hauf, Professor of Architectural Engineering, will serve as chairman of the Department, and Edward D. Stone of New York City will be Senior Critic in Architectural Design.

Supplementing the usual series of Visiting Critics will be a number of Visiting Critics in residence, each of whom will spend five weeks at Yale.

Appointments

Olindo Grossi, Chairman, Department of Architecture, Pratt Institute, has announced the appointment of three architects to the Pratt teaching staff: Huson Jackson, member of the firm of Jackson and Callender, Architects, and

(Continued on page 140)

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It's the function of good management to plan for tomorrow . . . to have things ready when they're needed. Good management will use the coupon to obtain complete details.

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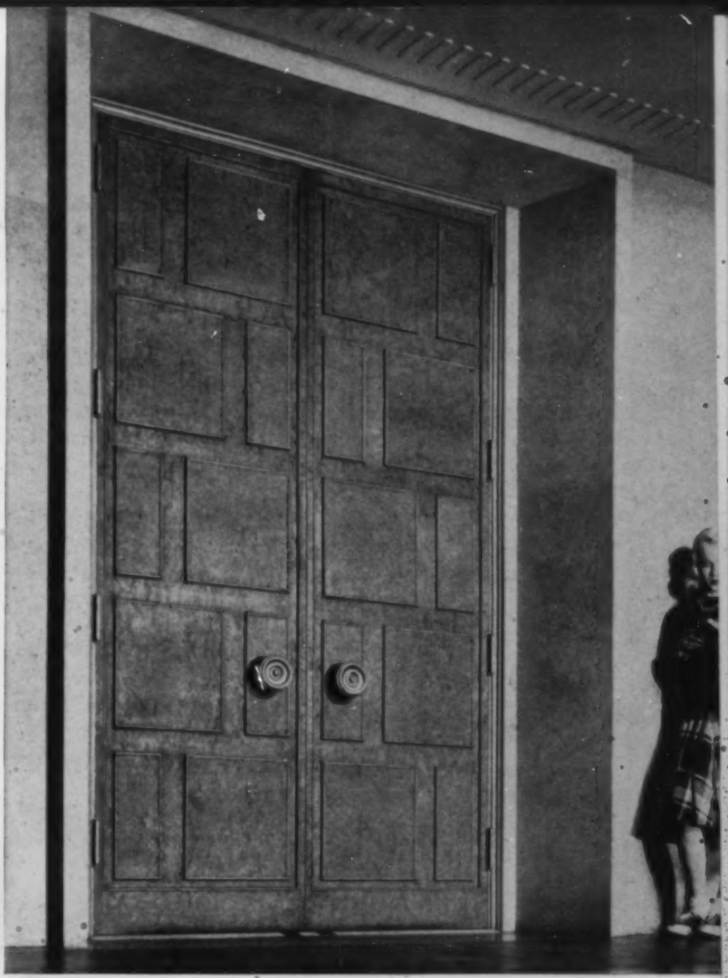
3 good reasons for—
none *against*—

using an Overhead Concealed Door Closer rather than the Floor Type

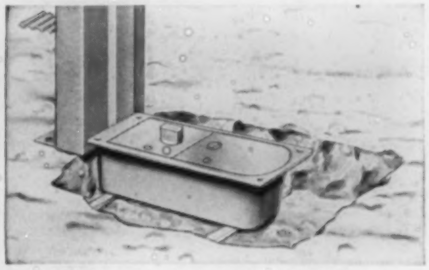
(We are positively NOT prejudiced in this matter. LCN's three types of Floor Closers deliver superior service, for their kind, but we recommend them only where Overhead Closers cannot be specified.)



LCN Overhead Concealed Closers on these fine doors; Holabird & Root, Archite

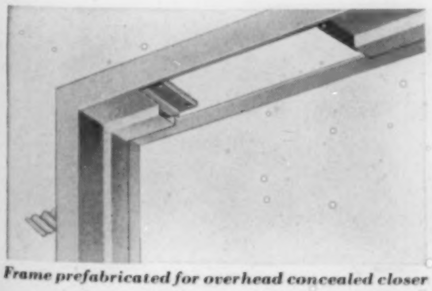
1 THE INSTALLED COST IS LESS

With job costs what they are today the architect must consider installation expense, as well as purchase price, in connection with any mechanical equipment.



Floor type closer set for grouting

The cost of installing a floor type door closer is a great deal more than that of an overhead concealed closer. A recess must be prepared in the floor, by setting a form while the floor is poured or by chipping out the concrete after the rough floor is in. Beams and conduits often make locating the closer difficult.



Frame prefabricated for overhead concealed closer

If a threshold is used it must be of the box type or one specially cut and drilled to take the closer, both expensive.

In contrast, the overhead closer is simply secured into openings blanked out of a metal frame and door at the factory, or easily cut into a wood frame and door.

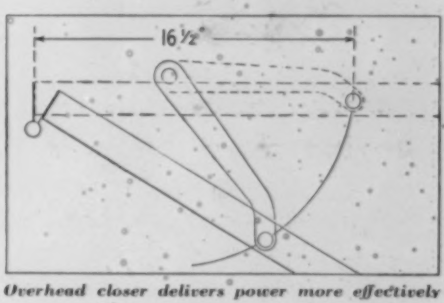
2 IT IS MORE EFFICIENT

An overhead door closer is basically more efficient because it can be located farther out from the hinge edge of the door than is practical with a floor closer. This gives much greater leverage, a better, smoother performance, and less strain on the closer, door and frame.

It is also simpler to service and regulate the overhead closer, as all adjustments are easy to reach without removing anything.

3 MAINTENANCE IS FAR LESS

Under equal conditions an overhead closer will outlast a floor type closer of similar basic design for two reasons: (1) it is subject to less mechanical strain in service; (2) located up over the door, it avoids the abuses of floor dirt, scrub water, etc. which always foul floor type closers and shorten their lives. This is doubly true where doors are exposed to the weather.



Overhead closer delivers power more effectively

We make both types

We cite these comparisons without prejudice, since the LCN line includes three types of floor closers which do their job as well as any such closers made. Many thousands are in constant use. But we know that the overhead closer works better, for a longer period, with far less attention and at lower cost, than the floor type. LCN catalog 11-a with full explanation gladly sent at your request; no obligation. Address LCN, 466 W. Superior St., Chicago 10, Ill.

LCN

Overhead and Floor Type
Concealed *and* Surface Type Door Closers

THE RECORD REPORTS

(Continued from page 138)

a graduate of the University of Chicago and Harvard University, *Design Critic;* Arthur Malsin, member of the firm of Sanders & Malsin, Architects, and graduate of Yale and Harvard Universities, *Design Critic;* and Ronald Allwork, architect and graduate of Columbia University, *Instructor in Construction.*

Morley Jeffers Williams has been appointed Professor of Landscape Architecture at North Carolina State College of Agriculture and Engineering of the University of North Carolina.

Eugene Sternberg, Czechoslovakian architect and town planner, has been appointed Associate Professor of Architectural Design at the Denver University School of Architecture. Professor Sternberg, formerly on the staff of the Department of City and Regional Planning at Cornell University, was senior assistant architect to Sir Patrick Abercombie, British town planner who prepared the new County of London Plan.

Other appointments to the Denver University staff include: G. Howard Miller, a naval architect during the war, *Instructor of Architectural Drawings;* Donald W. Decker, formerly with the Ziff-Davis Publishing Co., *Instructor in Building Construction;* and Garwood Andreson, *Associate Professor of Building Construction and Contracting* in charge of building methods and material research. Mr. Miller was appointed to the School of Architecture, Messrs. Andreson and Decker to the Department of Building Construction.

Gothic Discovery

Previous theories concerning the development of Gothic architecture must be reevaluated, reports Prof. Sumner McK. Crosby, chairman of the Department of the History of Art at Yale University, as the result of last summer's excavations under his leadership at the Church of St. Denis just north of Paris.

In reporting on the results of his work at St. Denis, Prof. Crosby said that the excavations show that this church is the prototype for the Cathedral of Notre Dame in Paris. A large portal opening to the south into the cloisters, he reported, "is in direct alignment with the piers of the nave, and does not, as was previously supposed, coincide with the architecture of the present church, which would have meant a transept with large projecting arms." This refutes the common belief that such early cathedrals as Laon followed the example established at St. Denis, Prof. Crosby added, and calls for a new interpretation of the first evolution of Gothic principles.

A stone bas-relief discovered in the course of the excavations, Prof. Crosby also reported, has established that the formula for early Gothic sculpture, developed at Chartres Cathedral, was evolved at St. Denis.

OFFICE NOTES

Offices Opened, Reopened

John Carroll Dunn, A.I.A., has opened an office at 717 Washington Pl., Baltimore, Md.

Robert A. Little, Architect, has opened an office at 1303 Prospect Ave., Cleveland 15, Ohio.

Donald C. F. Miller, Architect and Engineer, has opened offices at Hametown-Richfield Rd., R.D. No. 1, Box 350, Barberton, Ohio.

New Design Inc., a center for the display and sale of contemporary furniture and accessories, has opened at 33 E. 75th St., New York 21. Director of the center is Dorothy Q. Noyes.

New Addresses

The following new addresses have been announced:

Paul H. Ayer, Architect, 327 Moronet Bldg., Bakersfield, Calif.

(Continued on page 142)

IMPLEMENT OF ARCHITECTURE

SCHLAGE
STANDARDIZATION

The standardized chassis of Schlage locks permits the boring of all doors at once for economy of installation. Schlage standardization also simplifies the architect's specification job as it allows locks to be reversed or interchanged if plans change during construction.

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Because they speed up building time 20 to 30%.

Because they save a tremendous amount of drafting room time.

Because they provide dry, clean, quiet, incombustible, weight-saving construction.

And this is why the largest post-war office buildings in the South, in New England and in Canada are also using Q-Floors.

The over-all electrical availability of Q-Floor enables you to locate partitions and electrical outlets after the building is occupied. Think of this in terms of drafting room expense saved! The steel cells of Q-Floor are crossed over by headers which carry the wiring for telephone, power, signals and every other electrical device. An electrician merely drills a small hole—on any six-inch area of the exposed floor—to establish an electrical outlet. The whole job takes only minutes, leaves no trenches or muss.

You can see Q-Floor fittings at any General Electric construction materials distributor's. Write for detailed information for your file.

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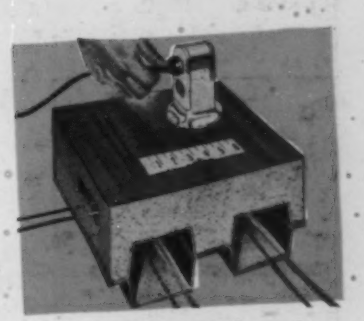
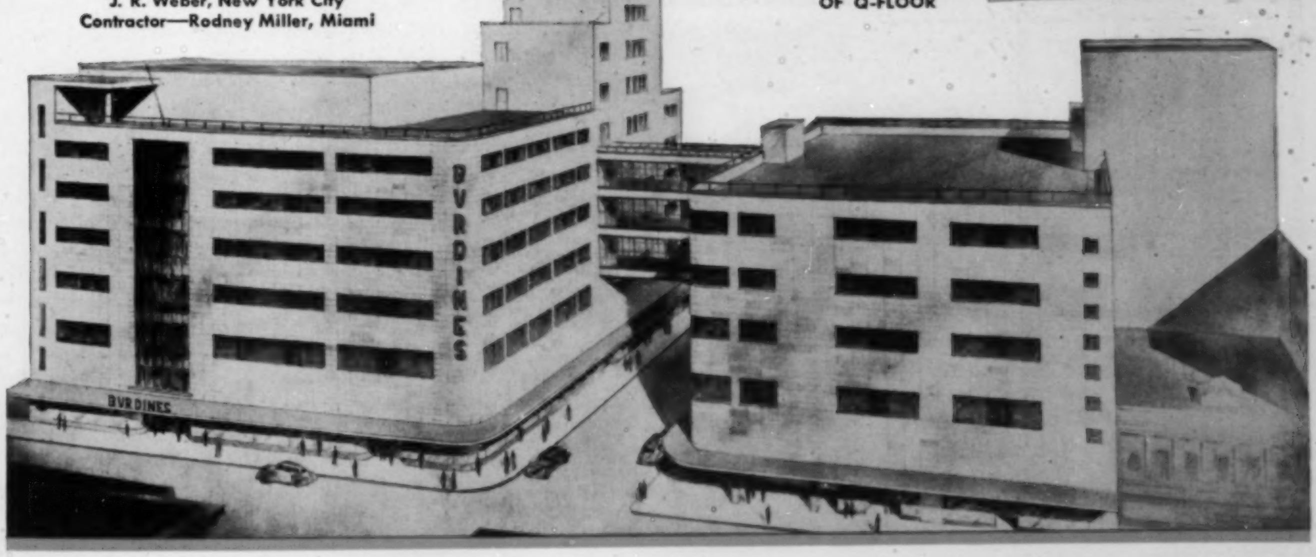


THIS IS 1 SQ. FT. OF Q-FLOOR

Burdine's, Miami
Architects—E. L. Robertson, Miami
J. R. Weber, New York City
Contractor—Rodney Miller, Miami



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Eugene Back, Architect, 677 Fifth Ave., New York 22, N. Y.

Ralph E. Crook, Architect, Suite 227, Lancaster National Bank Bldg., 126 W. Main St., Lancaster, Ohio.

Raymond Harry Ervin, Architect, 616 Patterson Bldg., Denver 2, Colo.

John T. Fairhurst (Fairhurst Unitfold Partition), 45 W. 45th St., New York, N. Y.

Faulkner, Kingsbury & Stenhouse, Architects, Ben H. Dyer, Associate, 1200 18th St., N. W., Washington 6, D. C.

Chas. T. Main, Inc., Civil Engineers (Boston offices), 80 Federal St., Boston 10, Mass.

Maul & Lentz, Architects and Engineers, 1222 Michigan Bldg., Detroit 26, Mich.

G. Mianulli, Consulting Engineer, 44 Court St., Brooklyn, N. Y.

Stanley C. Podd, Architect, 391 Delaware Ave., Buffalo 2, N. Y.

Walter H. Sobel, J. Stewart Stein, Architects-Engineers, 737 N. Michigan Ave., Chicago 11, Ill.

White and Griffin, Architect-Engineer-Associates, 126 John R, Detroit 26, Mich.

Firm Changes

Howard P. Beach, Jr., former Chief of Buildings Division, Civil Aeronautics Administration, has joined the staff of Airways Engineering Consultants, Inc., 1212 18th St., N. W., Washington, D. C.

Donald G. Fudge, Architect, and Alpheus F. Underhill, Engineer, have announced their association as Fudge & Underhill, Architects and Engineers, with offices at 103 E. Woodlawn Ave., Elmira, N. Y.

Albert D. Levy, Architect, has announced the organization of Pennurban Housing Corp. with offices at 125 E. 23rd St., New York 10, N. Y. The firm will engage primarily in the planning, construction and management of investment housing, with particular emphasis on the use of the prefabricated house. Associated with Mr. Levy are Philip E. Bennett and Willard L. Bleyer; all three formerly were connected with the Public Housing Administration.

Frederic W. Mellor, Architect and Engineer, has joined The Foundation Co., Engineers and Builders, 57 William St., New York City. Mr. Mellor, who before the war had his own architectural firm in New York, resigned recently as general sales manager of the H. K. Ferguson Co., industrial engineers and builders, of Cleveland.

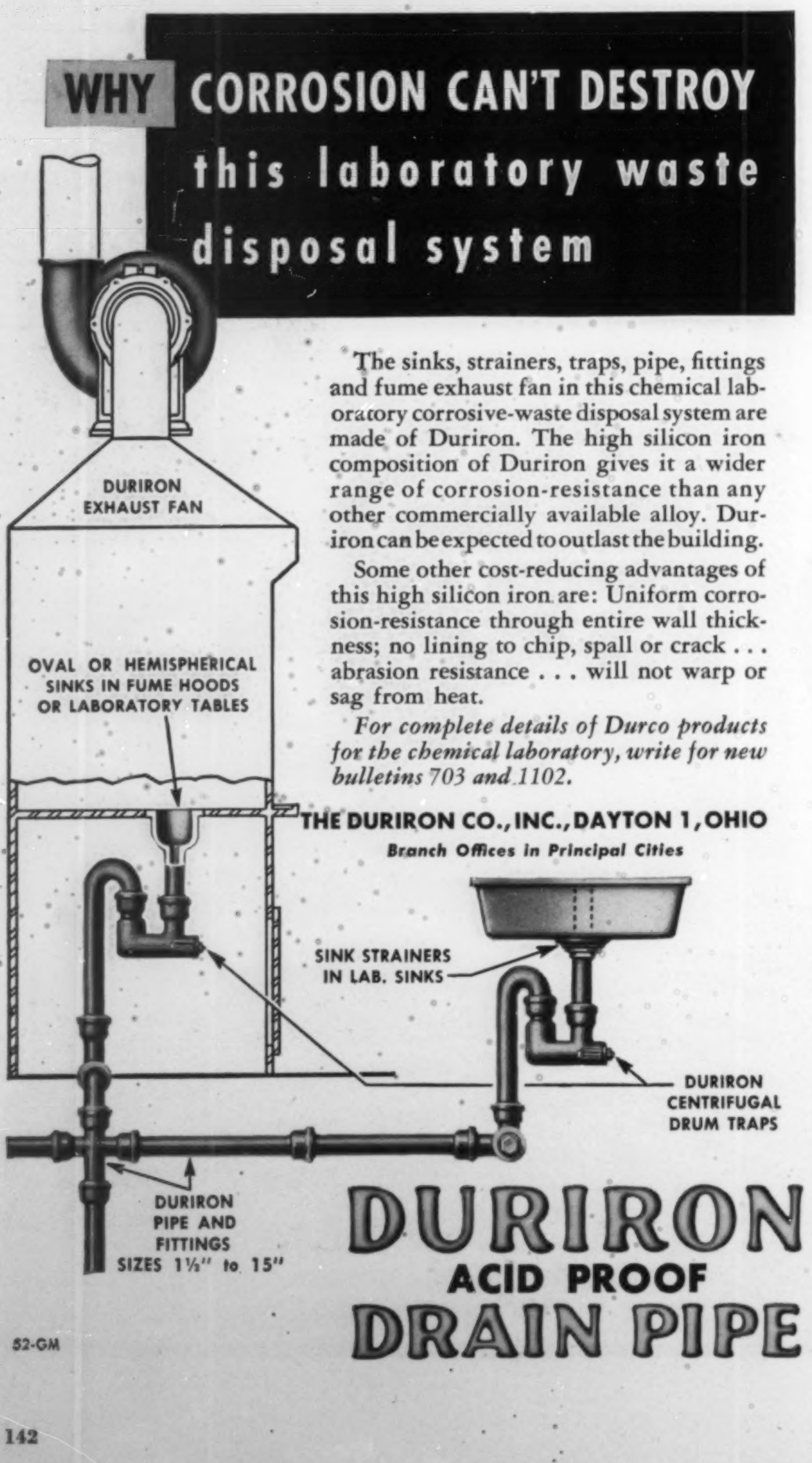
Stanley A. Moe, A.I.A., and Norman K. Fugelso have announced the formation of a partnership under the firm name of Moe and Fugelso, Architects, with offices at 4040 Wilshire Blvd., Los Angeles 5, Calif.

S. Y. Saito, Architect, and Thomas H. Flinn have opened an office for the practice of architecture under the firm name of Flinn & Saito, with offices at 513 Lafayette Bldg., Waterloo, Iowa.

APPOINTMENTS

Joseph Blumenkranz, A.I.A., of New York, has been appointed by the War Department, Corps of Engineers, Hospital Consultant in connection with the design of the hospitals under the nationwide $770 million construction program for the Veterans Administration. Mr. Blumenkranz, a member of the American Hospital Association and the Engineering Society of Puerto Rico, was formerly architect and hospital consultant for the government of Puerto Rico and senior architect of hospitals with the city of New York.

Charles M. Mortensen of Los Angeles has been appointed Executive Secretary of the Producers' Council.


WHY CORROSION CAN'T DESTROY this laboratory waste disposal system

The sinks, strainers, traps, pipe, fittings and fume exhaust fan in this chemical laboratory corrosive-waste disposal system are made of Duriron. The high silicon iron composition of Duriron gives it a wider range of corrosion-resistance than any other commercially available alloy. Duriron can be expected to outlast the building.

Some other cost-reducing advantages of this high silicon iron are: Uniform corrosion-resistance through entire wall thickness; no lining to chip, spall or crack . . . abrasion resistance . . . will not warp or sag from heat.

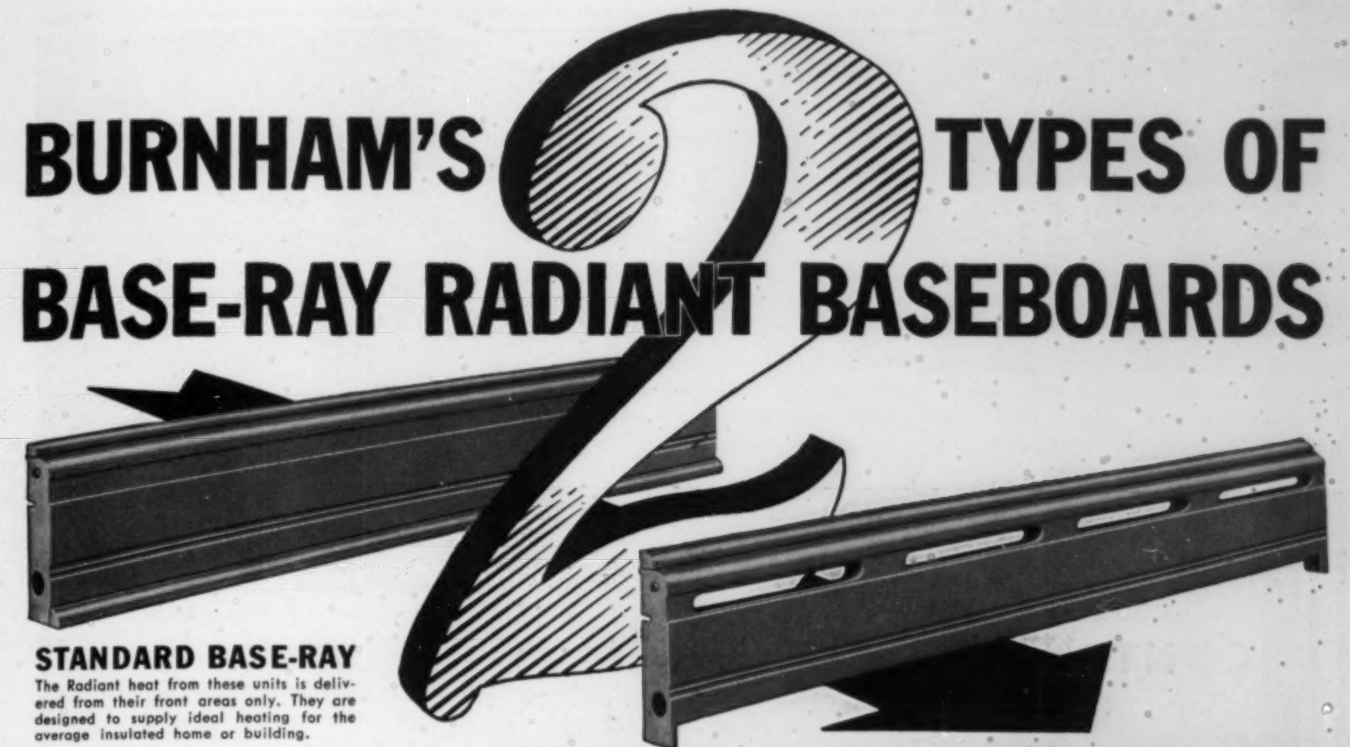
For complete details of Durco products for the chemical laboratory, write for new bulletins 703 and 1102.

THE DURIRON CO., INC., DAYTON 1, OHIO
Branch Offices in Principal Cities

DURIRON
ACID PROOF
DRAIN PIPE

52-GM
DURIRON EXHAUST FAN
OVAL OR HEMISPHERICAL SINKS IN FUME HOODS OR LABORATORY TABLES
SINK STRAINERS IN LAB. SINKS
DURIRON CENTRIFUGAL DRUM TRAPS
DURIRON PIPE AND FITTINGS SIZES 1½" to 15"

BURNHAM'S 2 TYPES OF BASE-RAY RADIANT BASEBOARDS



STANDARD BASE-RAY

The Radiant heat from these units is delivered from their front areas only. They are designed to supply ideal heating for the average insulated home or building.

HY-POWER BASE-RAY

For use where heat losses are greater or baseboard space is limited. Fin-back design of these units provides approximately 60% more heat.

BURNHAM
BASE-RAY
RADIANT BASEBOARD

. . . the practical approach to Radiant Panel Heating

Burnham BASE-RAY* Radiant Baseboards are the ideal approach to Radiant Panel Heating. While some forms of radiant heating installations are primarily applicable to new construction, BASE-RAY is easily installed in old buildings as well as in new. No change from orthodox construction is required in either case—no complicated engineering.

BASE-RAY is extremely flexible in application—with it you can solve practically any heating problem. It's efficient. And the radiant heat it delivers is second to none for winter comfort and general desirability.
When radiant heating is under discussion think first of BASE-RAY—*first* in the field with Radiant Baseboards—*first* in experience and know-how.

BASE-RAY OFFERS THESE ADVANTAGES

NO STRUCTURAL CHANGES No change from orthodox framing and finishing is required for BASE-RAY installations in new or alteration jobs.

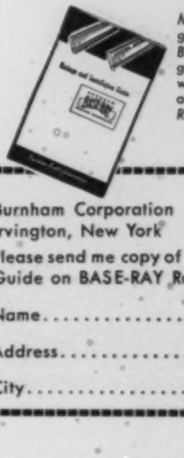
EASY INSTALLATION No more difficult to install than conventional radiator systems. Standard practice is used in determining boiler and pipe sizes.

EVEN HEAT DISTRIBUTION BASE-RAY maintains a floor-to-ceiling temperature differential of less than 3° even in zero weather. Ankle-height units deliver heat where most needed.

FLEXIBILITY IN CHOICE OF SYSTEM BASE-RAY may be used with any type hot-water, two pipe steam or vapor system.

ACCESSIBILITY Heating units, piping and valves are all immediately accessible—an important feature that is not found in many other Radiant Heating Systems.

*Reg. U.S. Pat. Off.



Mail coupon below for booklet giving complete information on BASE-RAY radiant baseboards. It gives ratings and installation data which will bring you up to date on this new and simple form of RADIANT heating.

See our exhibit at
INTERNATIONAL HEATING & VENTILATING EXPOSITION
NEW YORK, FEBRUARY 2-6, 1948

Burnham Corporation

BOILERS and RADIATORS
IRVINGTON, N. Y., Dept. AR127

I·B·R INSTITUTE OF BOILER AND RADIATOR MANUFACTURERS · MEMBER

Burnham RADIANT WARMTH SINCE 1873

Burnham Corporation Dept. AR127
Irvington, New York
Please send me copy of "Ratings and Installation Guide on BASE-RAY Radiant Baseboards."
Name. . . . .
Address. . . . .
City. . . . . State. . . . .

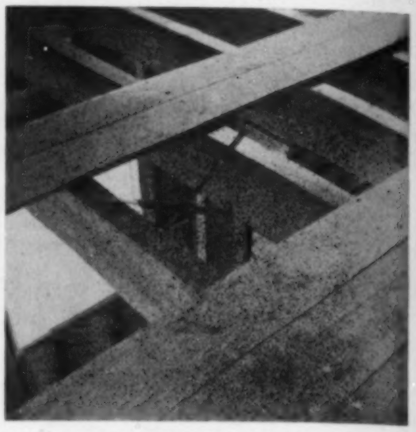
(Continued from page 119)

FLUID-DRIVE ELEVATORS

The automotive principles of fluid drive are applied to elevator service by means of the new *Gyrol elevator machinery*. The following advantages are claimed: less powerful motor requirements since motor starts under no load; simple elevator controls, one switch for upward travel and another for downward travel; and space savings due to the small size of the machinery. Entire unit, including motor, weighs 1600 lb.; rating is 1500 lb. and 125 ft. per min.; motor is 7½ hp., single speed, 1200 rpm. Warsaw Elevator Co., Warsaw, N. Y.

CROSS BRIDGING

Met-Cro steel cross bridging, designed to take the place of standard wood bridging between wood joists, consists of two flat steel strips joined at the center so that they open like scissors to fit between the joists. Ends of the strips are twisted into a half turn and have nail openings for fastening to the top and bottom surfaces of the joist. They are said to equal or exceed the strength of wood bridging and offer other advantages of fire-resistance, easier fastening without danger of splitting, flexibility to adjust for off-center joists, and elimination of dust-catching surfaces of wood bridging. Sizes are No. 101 for 2-by-8, 3-by-8 and 2-by-10 joists on 16 in. centers; and No. 102 for 2-by-8 and 3-by-8 joists on 12 in. centers. The steel bridging carries the approval of the Board of Standards and Appeals, New York City. Met-Cro Specialties Co., 87–31 78th St., Woodhaven 21, L. I., N. Y.



Steel cross bridging adjusts easily, replaces wood bridging between joists

ESCALATOR

A small Escalator has been developed especially for installations that require a rise of not more than 23 ft. (vertical distance from floor to floor, not at angle of travel which is 30 degrees). Earlier types have been constructed for rises up to 60 ft., so the new model makes possible lighter weight structural and mechanical members and operating economies. Width is 32 in. between handrails, scaled to provide just enough room on one step for an adult and child or an adult carrying large bundles. Operating machinery is built within the unit, eliminating the need for a separate machine room. Otis Elevator Company, 260 11th Ave., New York, N. Y.

PLASTIC DOOR PLATES

Door stops and "push" and "pull" plates for doors are molded of Tenite plastic in bronze and silver metallic shades and several plain colors. The letters on the door plates are inscribed against a ribbed background. Door stops are hollow, with one end plugged with a rubber bumper. Tenite plastic is said to be tarnishproof and easily cleaned with a damp cloth. Macklanburg-Duncan Co., Oklahoma City, Okla.

(Continued on page 146)

CONTRAST OR BLEND

With the many smart colors available in Amtico Rubber Tile any decorative mood can be created. Whether a soft toned background or a sharply patterned feature, these marbleized rubber tiles are a distinctive answer to your flooring problems. To the eye appeal of fine marble can be added carpet-like comfort underfoot. Footsteps are hushed by the resilient surface. Pleasant to stand or walk on, body-fatigue is reduced to a minimum. The plus values of easy maintenance and long life make the "Aristocrat of Floors" your first consideration for premium flooring. Send for your samples today!

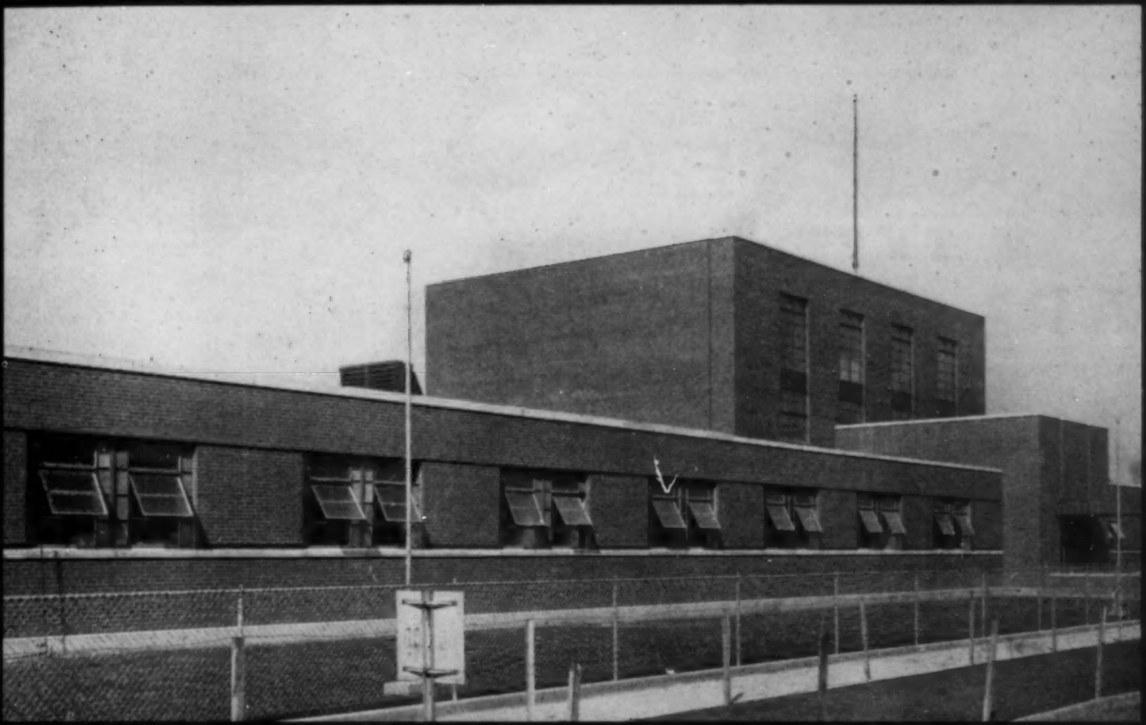
Amtico
RUBBER
TILE

AMERICAN TILE & RUBBER CO.
TRENTON, N. J.

1818 HOPE'S 1947

LOK'D BAR STEEL WINDOWS

PIVOTED OR COMMERCIAL PROJECTED



Synthetic Yarn Building, Carbide and Carbon Chemicals Corporation, South Charleston, W. Va.

EXTRA STRENGTH...LONGER LIFE

Hope's Lok'd Bar Steel Windows, pivoted or commercial projected, oppose greater strength to the forces of wear and tear, and assure longer life even under abusive operating conditions.

The "Lok'd Bar" design creates a stronger joint between horizontal and vertical muntins. Hope's Lok'd Bar Windows stand up better against wind pressure and the shocks of closing ventilators.

There are no applied weatherings to corrode or work loose. All sections are rolled in one piece and the inside and outside frames of all ventilators are solid welded at the corners. Integral weathering flanges close tightly on wide bearing surfaces, reducing wind infiltration, saving heating expense and providing greater comfort within.

For the life of the building, Hope's Lok'd Bar Steel Windows show less depreciation, cost less for upkeep and give more lasting satisfaction to the owner.

HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS

(*Continued from page 144*)

HEATING

Gravity Oil Furnace

Announced as particularly suitable for small houses having 50,000 to 65,000 Btu hourly losses, the *GAV-O Gravity Oil Furnace* is equipped with a mechanical-draft vaporizing-type oil burner with built-in oil-air control. Operation is said to be unusually silent. If desired, the unit can be converted to the use of gas. The housing, fabricated from heavy-gauge enameled steel, measures approximately 25 in. wide, 52 in. high, and 28 in. long. United States Radiator Corp., Detroit, Mich.

Anthratube

Compact coal furnace features automatic feed and automatic ash disposal

Coal savings of 15 to 38 per cent are said to be possible with *Anthratube boiler-burner units*, either bin-fed or hopper-fed, according to an announcement of the Anthracite Institute. The bin-feed unit measures only 24 by 31 by 42 in., and has a capacity of 400 ft. of steam or 600 ft. of hot water. The hopper model measures 27 by 47 by 37 in., and has a storage capacity of 250 lb. of coal, about three days' requirement. Automatic ash disposal, under an induced draft, is said to eliminate the seepage of ash dust into the basement. Manufacturers of the bin-feed unit are Axeman-Anderson Associates, Williamsport, Penn.; and the American Boiler Works, Erie, Penn., whose distributor is the Kenwill Corp., Cleveland; the hopper model is manufactured by the D. L. & W. Coal Co.. 120 Broadway, New York, N. Y.

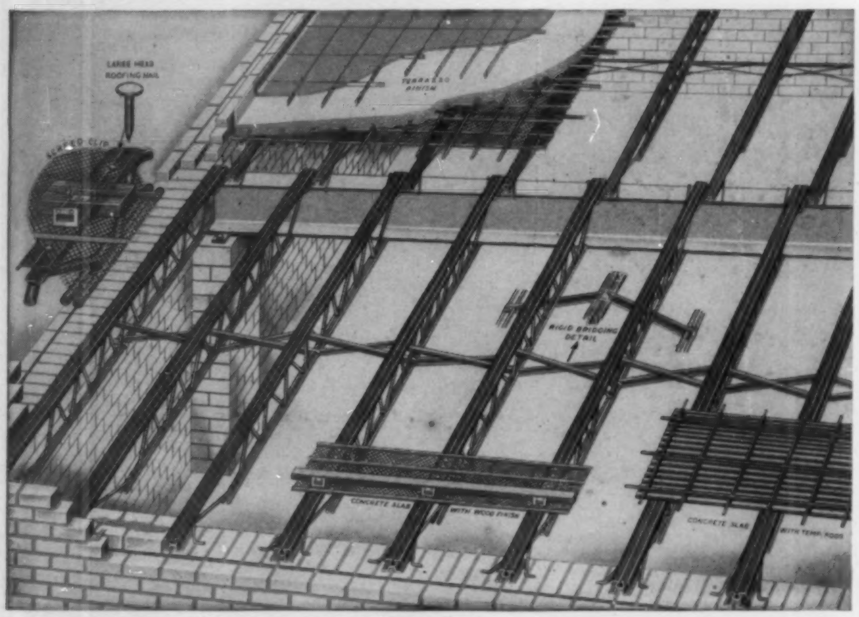
Panel Heating Control

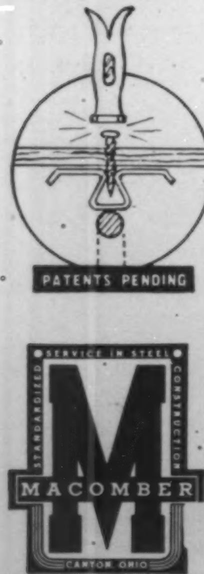
Just announced is a new indoor-outdoor control for radiant-panel hot water systems. The control is said to be especially suited for providing the close control needed for the mass of heating area and exacting low operating temperatures inherent in panel heating. There are two adjustments: one establishes the desired water temperature, the other varies the water temperature in accordance with outside temperatures, balancing the heat loss from the building. Greater or lesser room temperatures than the normal 75° can be obtained by turning a selector dial. A similar type of control is available for radiator and convector systems. White-Rodgers Electric Co., 1209 Cass Ave., St. Louis, Mo.

Automatic Heat Control

The *Fuel Watchman* is an automatic heat control that regulates boiler operation in apartment houses according to the time of day, outside temperature, and effect of solar radiation. Timing and temperature controls are adjusted to owner requirements, and, once set, are said to maintain building temperatures within two degrees of the desired tem-

(*Continued on page 148*)





MACOMBER
V TYPE
BAR JOISTS

PATENTS PENDING

Here's the original Macomber Bar Joist with the improved top chord that provides secure nailing for flooring materials. The structural convenience of the open web is maintained. The improved top chord holds nails in a vise-like grip. Result: Universal Application. Sizes are determined from standard Steel Joist Institute Load Tables. Catalog upon request.

STEEL JOISTS	ROOF TRUSSES	ROOF DECKING
ROOF PURLINS	LONGSPANS	STEEL SIDING

MACOMBER
CANTON • OHIO
MEMBER OF THE STEEL JOIST INSTITUTE

Bright, modern living room shows how Insulux Glass Block brings daylight far into living room; relieves corner darkness. Occasional washing is only maintenance required by Insulux.

←

Curved panels of Insulux Glass Block bring daylight with privacy to tenants of eight-story apartment building. Architect: Berla & Abel, Washington, D. C.

Here's enlightened living for city dwellers!

No need for apartment houses to be dark and dreary places . . . let Insulux Glass Block light the way!

Versatile Insulux combines a gracefulness of design in modern buildings with the functional ability to insulate against summer heat and winter cold.

Insulux permits new flexibility and originality in architectural planning and execution. It's ideal for bringing light deeper into rooms; for spreading daylight over wider interior areas. Wherever daylight with privacy is desired—there's a place for Insulux!

Widely used by many outstanding architects for residences, apartments and commercial establishments, Insulux Glass Block is installed in a manner similar to brick. Once in place, panels are permanent, require no painting, won't rot, rust or corrode.

For complete technical data, specifications and installation details, see the "Glass" section of Sweet's Architectural Catalog, or write Dept. D-12, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.

OWENS-ILLINOIS
INSULUX
GLASS BLOCK

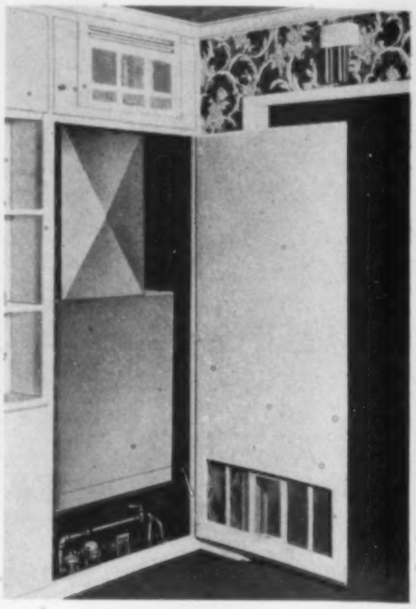
Insulux is made in three sizes—many attractive and functional patterns. Investigate this modern material that has solved many complex architectural problems.

(*Continued from page 146*)

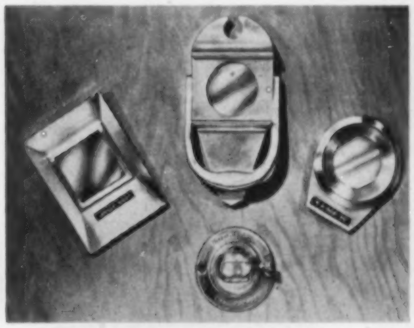
perature, 24 hours a day. The heat control consists of three units: a roof control, pre-set at the factory, which records solar radiation; an outside control, mounted on the north side of the building, to record actual outdoor temperature, and a main control panel with a time-clock control that can be set to operate the boiler only at certain hours depending upon the outdoor temperature and solar effect. Fuel Watchman Co., 77–29 138th St., Flushing, N. Y.

Closet-Size Heater

A new gas heater, known as the *Royal Jet-Flow*, is designed to fit compactly into a closet-size area and heat a small house, or larger buildings by means of multiple installations. Without using blowers or fans, the heater forces out warm air at a velocity of approximately 250 ft. per minute from registers just below ceiling level. Cold air is drawn in through a register at floor level, heated as it passes over the fire box, then compressed as it rises into a cone-shaped duct leading to the outlet registers. The Jet-Flow Heater is designed to burn natural, manufactured or L. P. gas; and comes in three sizes, with ratings of 25,000, 38,000, and 55,000 Btu's. Royal Heaters, Inc., Dept. AR, 1024 Westminster Ave., Alhambra, Calif.



Furnace in closet heats entire house



"Peep holes" have transparent mirrors

"MAGIC MIRROR"

Transparent mirrors are now being incorporated in door "peep hole" devices to permit the person on the inside to view a caller without being seen. From the outside only the reflective surface is visible. Known as *Magic Mirror Door Detectives*, these windows can be installed in a wood or metal door of any thickness. Magic Mirror Associates, Inc., 687 Third Ave., New York 17, N. Y.

PLASTIC SCREEN

Strength and elasticity are featured in the *Velon insect screen*, which reportedly will absorb impacts and spring back into shape without damage. It also is said to resist rust and to require no painting, since the color is an integral part of the plastic. Firestone Industrial Products Co., Akron, Ohio.

(*Continued on page 150*)

THE ANSWERS TO ARCHITECTS' QUESTIONS ABOUT TILE

You won't go wrong investigating Hastings Aluminum Wall Tile, the amazing ceramic-like tile, so easy to apply—goes over dry smooth surface with mastic cement as base.

- Is it chip-proof? A big YES, also won't crack or peel.
- Is it waterproof and fireproof? Absolutely, also impervious to alkali and resists stain.
- Is it light in weight compared with other kinds of tile? Yes, light as a feather.
- Is there a low cost advantage over other tiles? Metal Tile costs about one-half that of other tile.

Available in 12 beautiful colors: Gleaming White, Cream, Peach, Dubonnet, Apple Green, Dark Green, Canary Yellow, Black, Light Blue, Dark Blue, Ivory and Flame Red—from which virtually unlimited color combinations are obtainable.

SIZES: Field Tiles, 5″ x 5″; Trim Tile, Cap., 2½″ x 5″; Stripe, ⅜″ x 5″; Base 5″ x 5″. Also outside corners and wall plates for electrical outlets, available in matching colors.

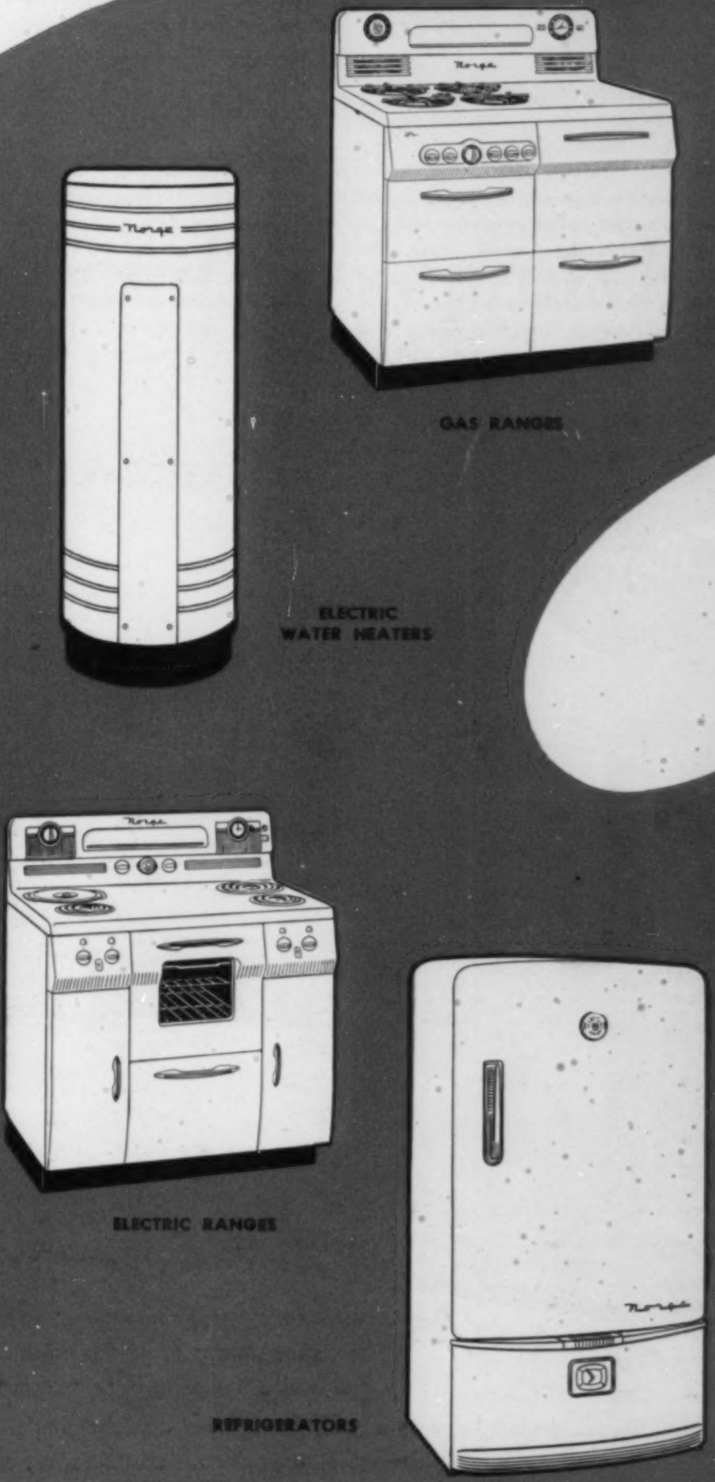
For your closest distributor write our factory

METAL TILE PRODUCTS, INC.
HASTINGS, MICH.

HASTINGS
ALUMINUM WALL TILE

GOOD EQUIPMENT... GOOD COMPANY

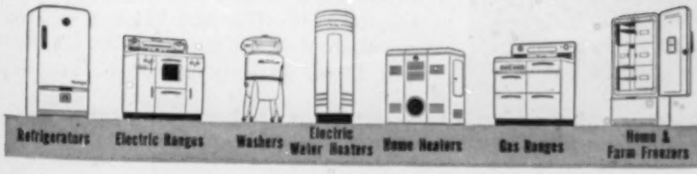
In suggesting or recommending Norge major appliances, you are keeping your client in "good company"... his home will further reflect his good judgment, and yours. Norge Division, Borg-Warner Corporation, Detroit 26, Michigan. In Canada: Addison Industries, Ltd., Toronto, Ontario.


Norge
GAS RANGES
ELECTRIC WATER HEATERS
ELECTRIC RANGES
REFRIGERATORS

Products of BORG-WARNER

ENGINEERING BW PRODUCTION

Norge products, distributed worldwide, are typical examples of the values made possible by the American system of free enterprise.


Refrigerators
Electric Ranges
Washers
Electric Water Heaters
Home Heaters
Gas Ranges
Home & Farm Freezers

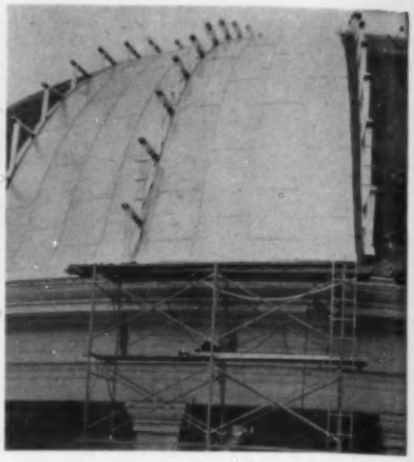
SEE NORGE BEFORE YOU BUY

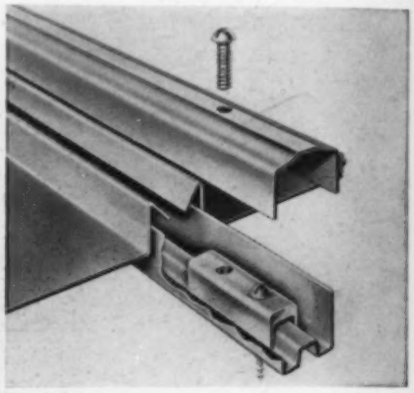
(Continued from page 148)

SEATLESS VALVE

Valve seat, washer, and all wearing parts are said to be eliminated in the *20th Century Seatless Valve* for plumbing installations. Two wear-resistant synthetic rubber collars engage the polished stem: the upper collar prevents leakage into the activating thread, while the lower collar acts as the seal for closing the valve. Announced advantages are absence of leakage, easier opening and closing, and quiet operation without hammer or chatter. 20th Century Valve Sales Division, Power-Pak Products, Inc., Buffalo 2, N. Y.

ALUMINUM ROOFING





(Above) Aluminum roofing being applied to Mormon Tabernacle, Salt Lake City. (Below) Batten-type roof sections

A batten-type system of aluminum roof construction was used in the extensive reroofing of the Mormon Tabernacle in Salt Lake City. Replacing an earlier roof of ornamental pressed metal shingles, the new roof of aluminum alloy sheet and extrusions is expected to prolong the life of the roof and reduce the load stress of the old wood framing, erected in the 1860's. After the old roofing had been stripped away to the bare wood sheathing, the sheathing was covered with 30 lb. tarred felt, attached with aluminum nails. The pre-formed aluminum panels were then applied, interlocking at top and bottom and fastened at the sides by aluminum battens. Overly Mfg. Co., Greensburg, Pa.

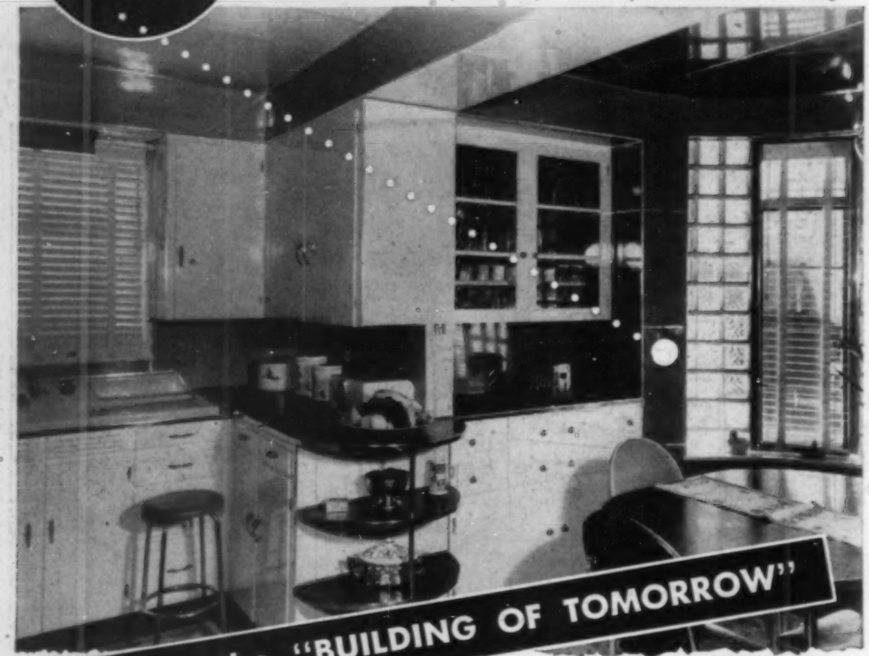
METAL LATH

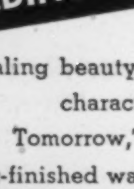
The Metal Lath Manufacturers Association, Cleveland, Ohio, requests that architects specify 1½-in. No. 11 gauge roofer's nails for attaching metal lath to horizontal wood supports. The Association formerly recommended 6-penny nails, driven in and bent over, but now believes that a nail which is driven home provides needed holding power.

ALUMINUM SHEET

Reynolds *Utility Sheet aluminum* is now available as roller-leveled flat sheets in widths of 30, 32, 36, and 48 in.; lengths of 96, 120, and 144 in.; and as coiled sheet in widths of 24, 30, 32, 36, and 48 in. Both forms can be had in thicknesses of 0.018 in., 0.020, 0.025, 0.032, 0.040, 0.051, and 0.064 in. The

(Continued on page 152)





plan on Marlite walls

Beautiful kitchen in the home of George Leikert, Detroit, Michigan, illustrates the modern beauty and utility of Marlite panels and Marsh mouldings.

. . . for the "BUILDING OF TOMORROW"

Appealing beauty and economical utility are characteristics of the "Building of Tomorrow," designed for better living. Versatile Marlite plastic-finished wall and ceiling panels, adaptable to every type of construction, provide colorful interiors that are at once pleasing and serviceable. Marlite seals in beauty, seals out dirt and grime, is quickly installed, easy to keep clean. Plan now to make the most of Marlite, designed for the "Building of Tomorrow." Marsh Wall Products, Inc., 1205 Main Street, Dover, Ohio.

For Creating Beautiful Interiors

Marlite
PLASTIC-FINISHED
WALL PANELS

"PETRO SINCE 1923

—and no regrets!"

S. V. Becker, New York architect and member of the American Institute of Architects, has specialized in apartment house and housing development planning. More than 300 such structures have been built in the New York area from his designs. Now under construction are Gregory House in Forest Hills and a $3,000,000 housing development for 410 families on Yellowstone Boulevard, Queens.

> Mr. Becker says:
>
> *"I have specified Petro equipment since 1923. I have never had occasion to regret it.*
>
> *"Petro equipment is well-designed, competitive in price, easy and inexpensive to maintain. My experience proves Petro to be reliable."*

When it's Petro an architect specifies, he *knows* he will have no regrets. For Petro lives up to its reputation . . . *always.* High heating efficiency, low operating costs — these assure the complete client satisfaction that strengthens the architect's own professional standing. Experience confirms this, again and again.

This confidence explains why Mr. Becker and so many other architects have specified Petro Oil Burning Equipment for many years. They appreciate Petro's high standards — reflected in the performance-proved Petro design, in Petro's sound engineering and skilled workmanship, in the fine quality of Petro materials. And they recognize that such standards make Petro the leader in dependable, economical oil burning systems.

You, too, will agree with Mr. Becker that confidence in Petro performance is always well-founded, well-rewarded.

INDUSTRIAL MODELS: No. 5 or No. 6 fuel oil; manual, semi-automatic or automatic operation; 8 sizes to 450 bhp. Thermal Viscosity preheating.

DOMESTIC MODELS: No. 3 or lighter oils; conversion and combination-unit types, 7 sizes. Patented "Tubular Atomization."

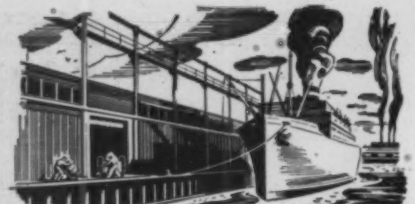
FULL DATA on Petro Industrial Burners are in catalog files of Sweet's and Domestic Engineering. Details on Petro Domestic Burners available in separate catalog. Copy of either sent gladly on request.

PETRO

REG. U. S. PAT. OFF.

cuts steam costs

PETROLEUM HEAT AND POWER CO. • *Makers of Good Oil Burning Equipment Since 1903* • Stamford, Connecticut



Millions of Feet Say "This Wood Adds Long Life"

DOCKS AND PIERS and boardwalks—wood that has demonstrated its durability on such jobs will give you lasting economical construction. "Wolmanized*" Treated Lumber is that kind. Examinations of oceanfront installations employing millions of feet of this long-lived lumber for superstructures—some of it put there twenty years ago—prove this.

"WOLMANIZED" LUMBER gives you this plus value without sacrificing the other very desirable advantages of wood construction: lower first cost, ease of handling and erection, light weight, strength, resilience. It is clean, odorless, and it can be painted.

VACUUM-PRESSURE impregnation with "Wolman*" wood preservative makes any kind of lumber highly resistant to decay and termite attack. "Fibre fixation" prevents leaching or washing out of the preservative. The treated wood does not corrode spikes, bolts and metal fittings. Control of impregnating processes in treating plants by one central laboratory insures a uniformly high-grade product.

"WOLMANIZED" LUMBER can be the key to faster construction schedules on your structures, and long life at low annual cost. American Lumber & Treating Company, 1679 McCormick Building, Chicago 4, Illinois.

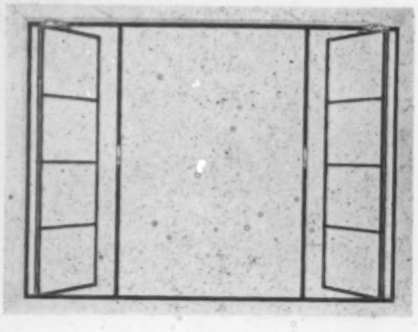
*Registered Trade Marks U. S. Pat. Off.

Wolmanized TREATED LUMBER

WOLMANIZED AL&T AMERICAN LUMBER & TREATING CO.

(Continued from page 150)

sheet will take a Pittsburgh lock seam, and reportedly can be bent, formed, welded, and otherwise fabricated. Suggested uses include ductwork, flashing, valley material, ridge rolls, and starter strips. Reynolds Metals Co., 2500 S. Third St., Louisville, Ky.



Picture window, flanked by casements, has slim steel frame and muntins

STEEL PICTURE WINDOW

The standard *Fenestra steel picture window* features a large fixed-light sash, glazed with a single pane of plate glass, and flanked by smaller ventilating casements. Steel frames and muntins are narrow to permit large glass areas. The vents are opened and closed by the Roto-Adjuster, a fingertip control that is said to require no tugging or prying. Locking handle provides a weathertight fit. Detroit Steel Products Co., 3113 Griffin St., Detroit 11, Mich.

NON-FREEZING HYDRANT

As protection from freezing, the shut-off valve of a new outside wall hydrant is located inside the basement wall. A rod from the hand control extends through the center of the pipe and connects to the shut-off valve inside. Valve body and head are made of brass and the outlet is threaded for ¾-in. hose connection. The James Knights Co., Sandwich, Ill.

HOUSE INTERCOM

Two-way conversations between various parts of the house are possible with the *Telephone intercommunication system.* The system works electronically, and consists of a master station to originate calls and as many as three answering stations located in other rooms of the house. Webster Electric Co., Racine, Wisc.

WALL TILE

Aluminum

Hastings Aluminum Tile for kitchens and bathrooms can be applied over any dry surface with mastic cement as a base. Colors are baked on, and reported

(Continued on page 154)

HOW TO SPECIFY A FENCE THAT'S BETTER IN 4 WAYS!

1 **Deep-Driven Anchors** hold the fence permanently erect and in line, yet can easily be relocated.
2 **Square Frame Gates** remain free from sagging and warping.
3 **U-Bar Line Posts** are rust-free, rigid and self-draining.
4 **Square Terminal Posts** improve strength, durability and appearance.

ANCHOR CHAIN LINK FENCE rates a top spot on your "spec" list for features like these! To your clients, they mean extra years of all-out protection. And they are *your* assurance of specifying the best in fencing for factory, institution and home alike.

WRITE TODAY for your copy of "Anchor Protective Fences." It's both a catalog and specification manual for your A.I.A. File 14-K. Contains structural diagrams and specification tables, installation photos, many types and uses of Anchor Chain Link Fence. Just ask for Book No. 110. Address: ANCHOR POST FENCE DIV., Anchor Post Products, Inc., 6600 Eastern Ave., Baltimore 24, Maryland.

Anchor Fence
Nation-wide Sales and Erecting Service

Music on the beach
at Waikiki

Royal Hawaiian Hotel, Waikiki Beach, Honolulu, T. H.

The Royal Hawaiian Hotel, on Waikiki Beach, combines superb hospitality with a romantic setting on one of the world's most beautiful beaches.

In keeping with the spirit of the noted hostelry is a new Western Electric sound system, the "secret" of which is the use of wide range, high quality 728B 12″ loudspeakers.

Forty-four 728B speakers, operated at low volume, supply the main dining room, the main lounge and the "surf bar." Three additional 728B speakers, operated at a much higher level, furnish music for outdoor dancing. The speakers are divided into six groups, arranged so three different programs may be presented in separate areas at the same time.

A microphone pickup from the outdoor bandstand, a radio receiver, two automatic record players and a local wired music service provide a choice of four program sources.

To learn how you can have a high quality, *low level* sound system tailored to fit your needs, contact the nearest representative of the Graybar Electric Company, distributors of Western Electric sound systems, or write to Graybar, 420 Lexington Avenue, New York 17, N. Y.

Western Electric

— QUALITY COUNTS —

HOSPITALS NEED MODERN STEAM HEAT

CENTRAL MICHIGAN COMMUNITY HOSPITAL Mt. Pleasant, Michigan. J. Walter Leonard, Chairman, Hospital Board. Built 1942. Architect: James Gamble Rogers, Inc., New York. Consulting Engineer: Jaros, Baum & Bolles, New York. Heating Contractor: A. W. Eurich, Bay City, Michigan.

Modern Steam Heating is almost a synonym for the Webster Moderator System of Steam Heating. In the Central Michigan Community Hospital, illustrated, the Webster Moderator System is proving its worth in a *small* hospital building. In the Delaware Hospital, Wilmington, Del., and in the U. S. Navy's tremendous Bethesda, Md., installation, Moderator Systems are proving their desirability in larger hospitals.

The Moderator System gives the Central Michigan Community Hospital:

(1) Quick heat everywhere in proportion to need.
(2) No override. When sun streams in, a turn of the wrist shuts off steam. No stored heat to run the temperature up, to tempt excessive window openings.
(3) Automatic control-by-the-weather through an outdoor thermostat.
(4) Low radiator temperatures in mild weather due to the jet orifice mixture of steam and air in each radiator or convector.
(5) A simple system whose mechanical and electrical elements are easy to maintain.

When discussing heating of a new hospital or revamping of an old heating plant, the nearest Webster representative is ready to work with you. He is experienced and interested in helping owner, architect, engineer and installing contractor.

WARREN WEBSTER & CO., Camden, N. J.
Representatives in principal U. S. Cities : : Est. 1888
In Canada, Darling Brothers, Limited, Montreal

WEBSTER
MODERATOR
SYSTEM
OF STEAM HEATING
"Controlled by the weather"

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(Continued from page 152)

to be proof against chipping and cracking. Size of the tiles, available in 12 different colors, is 5 in. by 5 in. Also available are trim tiles, base tiles, and wall plates for electrical outlets. Metal Tile Products Co., Hastings, Mich.

Plastic

A new plastic wall tile is self-aligning, with a tongue-and-groove joint and a center notch which fits a "dot" lock in the adjacent tile. This lock secures each tile in vertical or horizontal alignment; and the lap joint forms a complete plastic surface even under the tile joints, keeping the mastic from forcing through. The tile is available in a choice of colors, plain or marbleized. Pittsburgh Tile Co., Terminal Bldg., Pittsburgh 19, Pa.

DRAFTING AIDS

Template cutouts for the use of draftsmen include two new items: the No. 50 template with commonly used symbols, such as the circle, hex, delta, and square; and the No. 401 Ellipse Set Folio, containing four plastic sheets with a projection range of 20, 30, 45, and 60 degrees. Ellipse sizes are 3/8 in. to 2 3/4 in., major axes. Rapidesign, Inc., Dept. AR, P. O. Box 592, Glendale, Calif.

AIR EXHAUST

A commercial exhaust, constructed of cast aluminum, is designed for mounting on the outside wall with its louvered inlet extending through the wall and connecting directly to the duct system. The present model is rated at 980 CFM and powered by a 1/4 hp motor; motor is mounted outside the wind stream. Jenn Air Products Co., 325 Bankers Trust Bldg., Indianapolis, Ind.

CONDUIT CLAMP

A new conduit clamp snaps onto the conduit and stays in place while the clamp holder is fastened to wall or ceiling. It is constructed of steel with dual reinforcing ribs for greater strength. The size in production fits 1/2-in. EMT or thin-wall pipe conduit, or 3/8-in. standard pipe. Industrial Devices, Inc., 22 State Rd., Edgewater, N. J.

NIGHT LATCH

The *Free Hand Night Latch*, No. 3A6, is a newly developed door latch that can be opened with one hand. A quarter turn of the key opens the latch, and the bolt stays back, freeing the hand to operate the regular knob or front door handle. Afterwards, a turn of the key back to the original position closes the latch bolt. P. & F. Corbin Div., The American Hardware Corp., New Britain, Conn.

VAPOR CONDENSATION ON WINDOWS May Help Cupid . . .

but

"In-wall" Condensation Invites Trouble

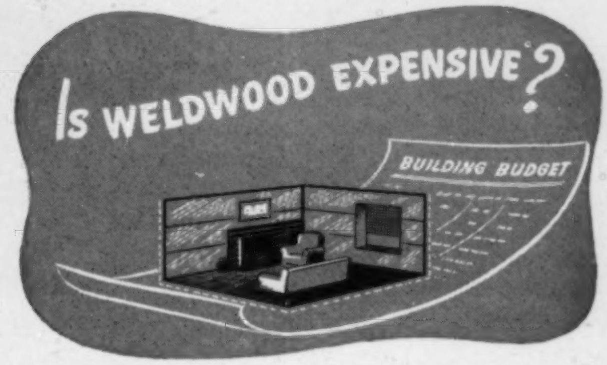
"Steam" on the window may be a boon to puppy love, but when the same vapor condenses within walls it can lead to serious trouble. Unchecked condensation may rob insulation of its efficiency, hasten structure rot, cause paint peeling and wall stains. A sure way to prevent "in-wall" moisture damage is with a separate vapor barrier. Architects the country over specify the standard—Bird Neponset Black Vapor Barrier. Applied on the warm side of insulation, Bird Neponset Black repels vapor, keeps insulation at peak efficiency, stops other condensation evils. Costs only about $20 to protect a $10,000 building. Consult Sweet's Architectural file, 9b-2. For sample, write Bird & Son, inc., 179 Wash. St., East Walpole, Mass.

VAPOR BARRIER
OUTSIDE OF WALL COLD SIDE
INSIDE OF WALL WARM SIDE
SHEATHING
STUD
BIRD NEPONSET PRODUCTS

Specifications: roll width: 36"; Sq. feet: 500; approximate wt.: 50 lbs. Asphalt Saturated. Coated both sides with glossy asphalt surface. Meets Federal Specifications UU-P-536 Grade B.

BIRD NEPONSET BLACK VAPOR BARRIER
BIRD & SON, inc., E. WALPOLE, MASS.
CHICAGO NEW YORK SHREVEPORT

MANY OF YOUR CLIENTS CAN ANSWER THESE QUESTIONS . . . CAN YOU?



No. We'll readily admit a Weldwood-paneled room looks like a million. But when maintenance expense over the years is considered, a room paneled in Weldwood compares favorably in cost with ordinary plaster, paint and paper . . . both for new construction and remodeling.

Fact is, you can do a 12 x 18 room in Birch Weldwood for less than $300** . . . materials *and* installation. Stop and think how little that adds to monthly FHA payments, with a home improvement loan.

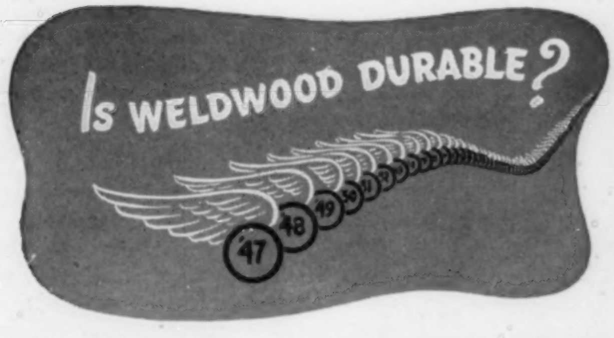
Many of your clients know this!

Is WELDWOOD VERSATILE?

Yes, indeed. Choose your style, then choose Weldwood for the interior. There's a wood for every mood. You'll find exactly what's needed for traditional effects; also beautiful woods for sleek, modern twentieth-century surroundings. Use Weldwood in several rooms, or just one. Do all four walls, even one wall, or simply the dado.

And you can work many clever, "built-in" miracles with Weldwood, for it provides structural strength as well as decorative beauty.

Many of your clients know this!

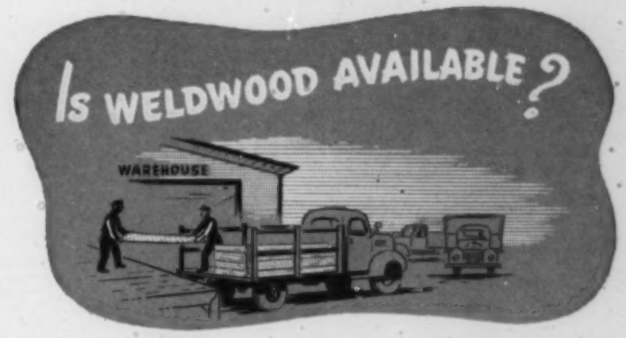


It is. Weldwood Plywood Panels are guaranteed for the life of the building in which they're installed.

And they'll remain luxuriously beautiful with a minimum of maintenance. No recurrent expense for papering and painting.

Durability like this makes Weldwood a good investment. Either in a new home or for remodeling, it adds a *permanent* value.

Many of your clients know this!



Yes, right now. Most grades and varieties of Weldwood . . . especially the decorative hardwoods . . . can be obtained immediately in the most popular sizes and thicknesses.

Fine domestic woods such as birch, oak, walnut, knotty pine and vertical grain cedar. Rich imported woods like de oro, mahogany, primavera. There's a wood to fit every taste and every pocketbook in the Weldwood line.

Many of your clients know this, too!

Why do your clients know these things? Because, in recent years, we've maintained a steady advertising program to tell them. We've hammered home the advantages of Weldwood in ad after ad.

Beauty. Durability. Versatility. Ease of installation. And *Economy.*

Has our effort had any effect? Well, a recent independent survey indicates that 1 out of every 3 home-minded Americans wants wood-paneling in at least one room.

And Weldwood gives it to them at a price they can afford to pay.

Take advantage of this acceptance. You'll find a warm reception for plans that include Weldwood Walls. We'll be glad to send complete data.

**Prices may vary slightly in different sections of the country, due to local conditions.

Weldwood* Hardwood Plywood
Douglas Fir Weldwood
Mengel Flush Doors
Douglas Fir Doors
Overhead Garage Doors
Molded Plywood
Armorply* (metal-faced plywood)
Tekwood* (paper-faced plywood)
Flexmetl
Weldwood Glue* and other adhesives
Weldtex* (striated plywood)
Decorative Micarta*
Flexwood*
Flexglass*
Firzite* *Reg. U.S. Pat. Off.

WELDWOOD Plywood

Weldwood Plywood and Mengel Flush Doors are products of

UNITED STATES PLYWOOD CORPORATION
New York 18, N.Y.

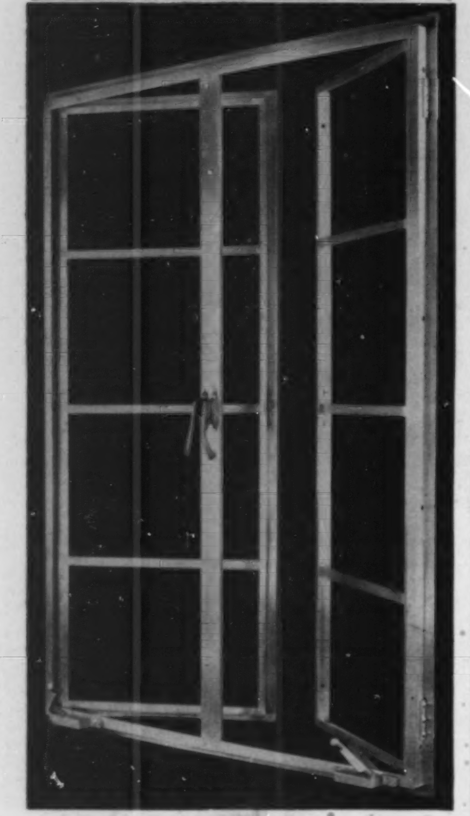
THE MENGEL COMPANY
Louisville 1, Ky.

Distributing units in Baltimore, Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, Fresno, High Point, Los Angeles, Milwaukee, Newark, New York, Oakland, Philadelphia, Pittsburgh, Rochester, San Francisco, Seattle. Also U.S.-Mengel Plywoods, Inc., distributing units in Atlanta, Dallas, Jacksonville, Louisville, New Orleans, Houston, St. Louis. *In Canada:* United States Plywood of Canada, Limited, Toronto. *Send inquiries to nearest point.*

Weldwood Plywood is made in both Interior and Exterior types, the former bonded with extended urea resins and other approved bonding agents; the latter with phenol formaldehyde synthetic resin.

ware

aluminum windows



beautiful windows that need no painting • never rust • never rot • lightweight yet rigid

the heavier window sections of ware aluminum windows assure permanent alignment, storm-tightness. ware aluminum windows are easy to open and close. their clean, silvery beauty remains throughout the years.

ware laboratories, inc.
3700 n. w. 25th st., miami 35, fla.
general sales office
21 west street, new york 6, n. y.

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(Continued from page 120)

INTERCOM

(1) How to Solve Communication Problems; (2) Sound—A Modern Control System. Brochures describing intercommunication systems for offices and industrial plants, in the interests of department coordination and relief of switchboard congestion. Also described are voice-paging and industrial music systems. 8 pp., each, illus. Executone, Inc., 415 Lexington Ave., New York 17, N. Y.*

LAUNDRY EQUIPMENT

Prosperity Laundry Equipment. Catalog of equipment units for hospitals, institutions, and commercial laundries. Includes plan of typical laundry room layout for 250-bed hospital. 8 pp., illus. The Prosperity Co., Syracuse 1, N. Y.

WATERPROOFING

Fight Water. Waterproofing methods and products used to solve problems in concrete and masonry construction; specifications for new construction, and maintenance and repair methods, involving concrete densifiers, coatings, joint sealers, and caulking compounds. 4 pp., illus. Sika Chemical Corp., 35–49 Gregory Ave., Passaic, N. J.

KITCHEN PLANNING

Kitchen Hints by Kitchen Maid. A collection of sample plans of kitchens, showing various arrangements of service cabinets. Includes scale drawings of individual wall units, base units, sink fronts, and utility units. 16 pp., illus. The Kitchen Maid Corp., Andrews, Ind.

INDUSTRIAL WASHROOMS

Washfountain Equipment (Catalog 4701). Booklet describing a complete line of washfountains, multi-stall showers, and drinking fountains for factories, schools, and institutions. Specification data and suggestions for washroom planning. Bradley Washfountain Co., Milwaukee, Wisc.

PUMPS

Automatic Self-Priming Pump. Brochure giving operating details of a pump with a new type of automatic spring valve, for faster transition from priming or vacuum pumping to straight centrifugal action: design and operating details, list of applications. 8 pp., illus. Allis-Chalmers Mfg. Co., Milwaukee 1, Wisc.

ELEVATOR PLANNING

Vertical Transportation Engineering and Planning Service (Bulletin B-677). Describes free Otis consulta-

(Continued on page 158)

EXTRA EXTRA

Read All About It!

H. B. Smith Cast-Iron Boilers are packed with *extra* heating surface . . . you can read all about it in H. B. Smith literature. The *extra* that means real fuel economy is in the many *more* square feet of *direct* fire surface packed into H. B. Smith boilers.

Match this heating surface with that of any cast-iron boiler of equal grate area and you'll see why H. B. Smith boilers extract more value from each fuel unit burned. Conventional cast-iron boilers have *single* water tubes on either side of the fire pot; large H. B. Smith boilers have *two* vertical tubes, leading into many other vertical and lateral tubes that are packed with water backed surface. That means all the flue gases get a chance to scrub along this *extra* heating surface, *more* heat units are transmitted to the water.

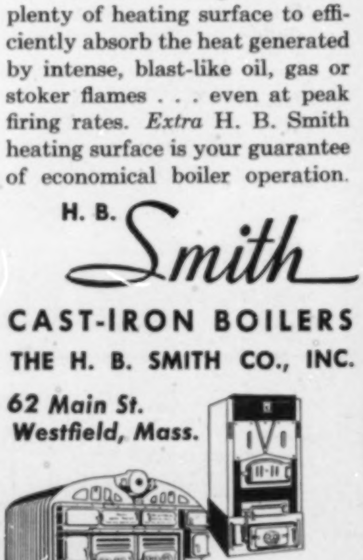
That, too, is why H. B. Smith boilers are outstandingly efficient for automatic firing. There is plenty of heating surface to efficiently absorb the heat generated by intense, blast-like oil, gas or stoker flames . . . even at peak firing rates. *Extra* H. B. Smith heating surface is your guarantee of economical boiler operation.

H. B. Smith

CAST-IRON BOILERS

THE H. B. SMITH CO., INC.

62 Main St.
Westfield, Mass.



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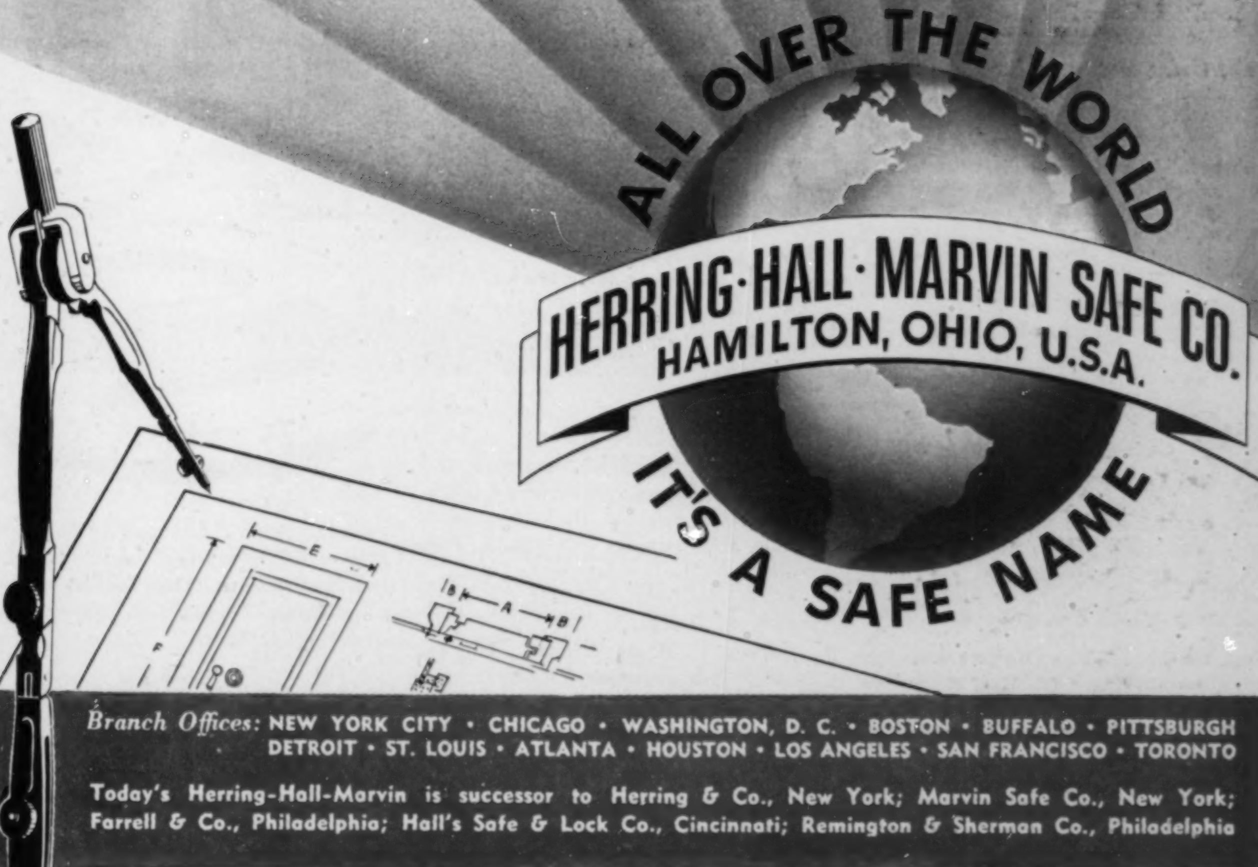
Originators of Comprehensive Engineering Cooperation to the Architect . . .

A Great Safe Name . . . . . more respected today than ever before. Identifying the world's most finely engineered fire-and-burglar resistive equipment and devices for banks, commerce, industry and the home.


ALL OVER THE WORLD
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IT'S A SAFE NAME

Branch Offices: NEW YORK CITY · CHICAGO · WASHINGTON, D. C. · BOSTON · BUFFALO · PITTSBURGH
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Wing Revolving Heaters

for Hard-to-heat Buildings

The ideal heating system for hard-to-heat buildings is an installation of Wing Revolving Unit Heaters. The Wing Revolving Unit Heater is unique in that it does what no other heater can do — its slowly revolving outlets gently distribute the heat continuously in a constantly changing direction. It reaches over, around and under obstructions into far away corners, its moving streams of heated air spreading an even, uniform, healthfully invigorating blanket of warmth over the entire working area.

There is a Wing Revolving Unit Heater designed for almost any size, shape, height, or exposure of building. Wing Revolving Unit Heaters are used in many of the country's leading industrial plants. Write for a list of installations.

WING
Revolving
HEATER

Wing Revolving Unit Heaters keep the heated air moving, circulating around obstacles, seeking out far corners, spreading an even, uniform, healthfully invigorating blanket of warm air over the entire working area.

Write for Bulletin HR-5

L. J. Wing Mfg. Co.

151 W. 14th St., New York 11, N. Y.
Factories in Newark, N. J., and Montreal, Canada

(*Continued from page 156*)

tion service to help architects and engineers with the planning of passenger and freight elevators, Escalators, and dumbwaiters. 12 pp., illus. Otis Elevator Co., 260 11th Ave., New York.

ELECTRICAL FITTINGS

Gedney Fittings (Bulletin 48). Catalog of a complete line of electrical fittings: conduit fittings, EMT fittings, box connectors, entrance fittings, cable fittings, ground fittings, connectors for nonmetallic sheathed cable, straps and clamp backs, conduit bodies, and EMT bodies. Gedney Electric Co., RKO Bldg., Radio City, New York 20, N. Y.

FLOORS

Floor Facts. General information about terrazzo, asphalt tile, linoleum, rubber, concrete, and wood floors: specifications for their protection and maintenance. Vestal, Inc., 4963 Manchester St., St. Louis 10, Mo.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Paul H. Ayer, Architect, 327 Moronet Bldg., Bakersfield, Calif.

Ralph E. Crook, Architect, Suite 227, Lancaster National Bank Bldg., 126 W. Main St., Lancaster, Ohio.

Flinn and Saito, Architects, 513 Lafayette Bldg., Waterloo, Iowa.

Howard H. Halperin, Student, 3522 W. Ogden Ave., Chicago 23, Ill.

Arthur P. Herrman, Executive Officer, School of Architecture, University of Washington, Seattle, Wash.

David J. Lakomecz, Architectural Designer Draftsman, 1649 Lake Ave., Whiting, Ind.

Robert A. Little, Architect, 1303 Prospect Ave., Cleveland 15, Ohio.

G. Mianulli, Consulting Engineer, 44 Court St., Brooklyn, N. Y.

Donald C. F. Miller, Architect and Engineer, Hametown-Richfield Rd., R. D. No. 1, Box 350, Barberton, Ohio.

Moe and Fugelso, Architects, 4040 Wilshire Blvd., Los Angeles 5, Calif.

Stanley C. Podd, Architect, 391 Delaware Ave., Buffalo 2, N. Y.

Gordon H. Ream, Student, 77 Beaconsfield Rd., Leicester, England.

A. Rorke Vanston, Architect, Hospital Division, Architectural and Engineering Section, State Board of Health, Columbia, S. C.

Seiichi Washizuka, Architect, 16 1-Chome Shinbashi, Minatoku, Tokyo, Japan.

William and Sylvia Wilde, Design Consultants and Architect, 415 East Fifth St., Tucson, Ariz.

Hillyard
FLOOR TREATMENTS

SAVE

FLOORS

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Hillyard Floor Treatments SAVE all types of floors in every type of Institution . . . they are Uniform, Dependable, and Economical, and bring out the natural beauty of every type floor.

Send for our new FREE book "Floor Job Specifications" full of helpful hints on economical floor maintenance.

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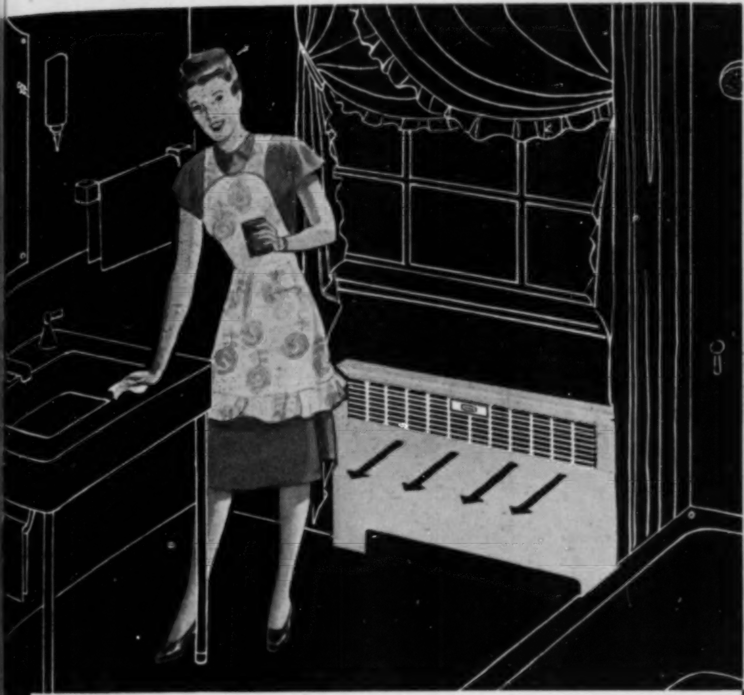
Radiant heat rates first with me

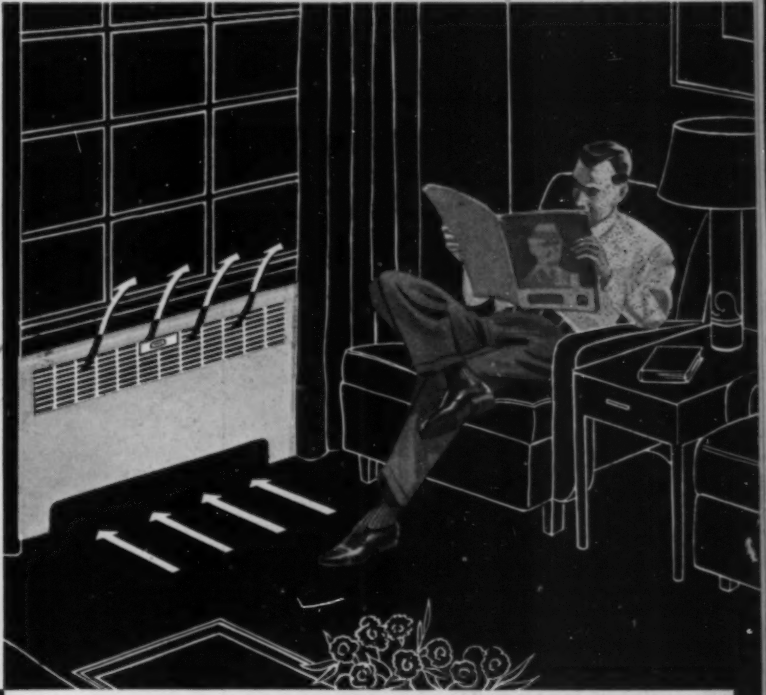
Convection heat rates first with me

Modine Convector Radiation gives you BOTH of these great heating principles blended into one!



1 YOU GET RADIANT HEATING

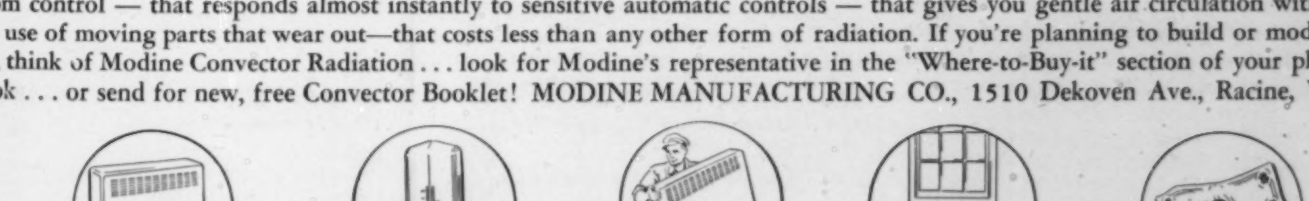
See those arrows coming from the Modine Convector Panel below the window? That's *radiant heating* — mild, radiant heat in just enough quantity to offset heat loss from window areas. But that's not all . . .



2 YOU GET CONVECTION HEATING

These arrows indicate *convection heating!* Hot water or steam passes through copper heating unit which draws cooler, floorline air into bottom of convector where it's warmed, rises and then passes out through grille.

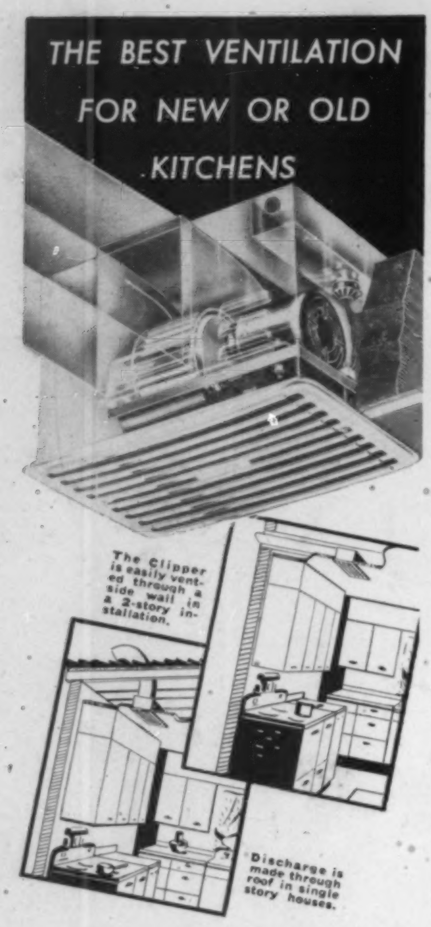
Result: Dependable new hot water and steam heating comfort for moderate cost homes, apartments, commercial and institutional buildings . . . distinctive room charm and cleanliness without unsightly radiators! Modine Convector Radiation gives you a modern, blended heating system for modern living — a heating system that provides individual room control — that responds almost instantly to sensitive automatic controls — that gives you gentle air circulation without the use of moving parts that wear out—that costs less than any other form of radiation. If you're planning to build or modernize, think of Modine Convector Radiation . . . look for Modine's representative in the "Where-to-Buy-it" section of your phone book . . . or send for new, free Convector Booklet! MODINE MANUFACTURING CO., 1510 Dekoven Ave., Racine, Wis.


MODERN BEAUTY
CLOSE TEMPERATURE CONTROL
EASY TO INSTALL
ADDS TO LIVING SPACE
PRICED FOR TODAY'S HOMES AND APARTMENTS

Modine

CONVECTOR RADIATION

The Modern "proved by use" heating method


THE BEST VENTILATION FOR NEW OR OLD KITCHENS
The Clipper is easily vented through a side wall in a 2-story installation.
Discharge is made through roof in single story houses.

TRADEWIND CLIPPER BLOWER

THIS proven method of ventilating home kitchens and other small rooms traps heat, grease and odors the instant they rise and expels them out-of-doors. Clipper Blowers offer two vital advantages:

1. They are located in the ceiling directly above the stove — where the heat and smudge first collect.
2. The motor in the Clipper is completely separated from both the blower and the dirty air — an exclusive patented feature which has resulted in greater efficiency, longer life, easier servicing.

Study the sketches above. Clipper Blowers are quickly and inexpensively installed in the ceiling between joists and vented outside. Only an inconspicuous "dripless" ceiling grille is visible, yet motor and blower assembly are instantly removed without tools.

Clipper Blowers are available now at electrical dealers from coast to coast, or write us for literature.

TRADE-WIND MOTORFANS, INC
5707 SO. MAIN ST., LOS ANGELES 37, CALIF.

REQUIRED READING

(*Continued from page 30*)

ment Station. Photos and diagrams are numerous, and all recommended steps are itemized for quick reference.

SEPTIC TANKS

Septic-Tank Systems (Circular Series Index No. G5.5). Urbana, Ill. (Mumford House), Small Homes Council, University of Illinois, 1947. By E. W. Lehmann. 8½ by 11 in. illus. 6 pp. Gratis.

This is the 18th of the University of Illinois Small Homes Council's nontechnical circulars for home owners. It explains the essential parts of the septic-tank system, how the system operates, its construction and installation, and its maintenance. Construction details are given in a large chart, and a table of capacity and dimensions for rectangular tanks is included.

VAPOR TRANSMISSION

Moisture and Temperature Control in Buildings Utilizing Structural Insulating Board. By Frank B. Rowley, Millard H. LaJoy, and Einar T. Erickson. (Bulletin No. 26.) Minneapolis 14, Minn., Engineering Experiment Station, Institute of Technology, University of Minnesota, 1947. 6 by 9 in. 38 pp. illus. 50 cents.

This bulletin is a continuation of previous studies on the vapor transmission of structural insulating boards, sponsored cooperatively by the University of Minnesota and the Insulation Board Institute. It includes descriptions and illustrations of the test apparatus, test methods, and complete test results, together with the conclusions reached. Interior and exterior surface finishes of specific vapor permeability rates are recommended with respect to effectively reducing moisture condensation in residential structures. Attic ventilating requirements, and conclusions reached from attic air temperature study are also included.

AIR STERILIZATION

The Disinfection of Air. Report of the Committee on Air Sterilization and Conditioning of the Council on Hospital Planning and Plant Operation, American Hospital Assn., Chicago 10, Ill. (18 E. Division St.), American Hospital Assn., 1947. 5½ by 8½ in. 22 pp. 25 cents.

Various methods of guarding against airborne infection in hospitals are discussed in this report, including chemical disinfection, dust suppression, ultraviolet radiation and removal of infected air by active ventilation. Efficacy and comparative costs of the various methods are studied and conclusions of interest to anyone connected with operation of the hospital plant are presented.

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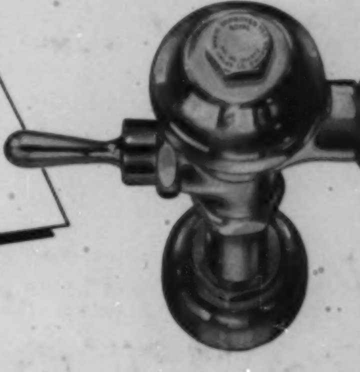

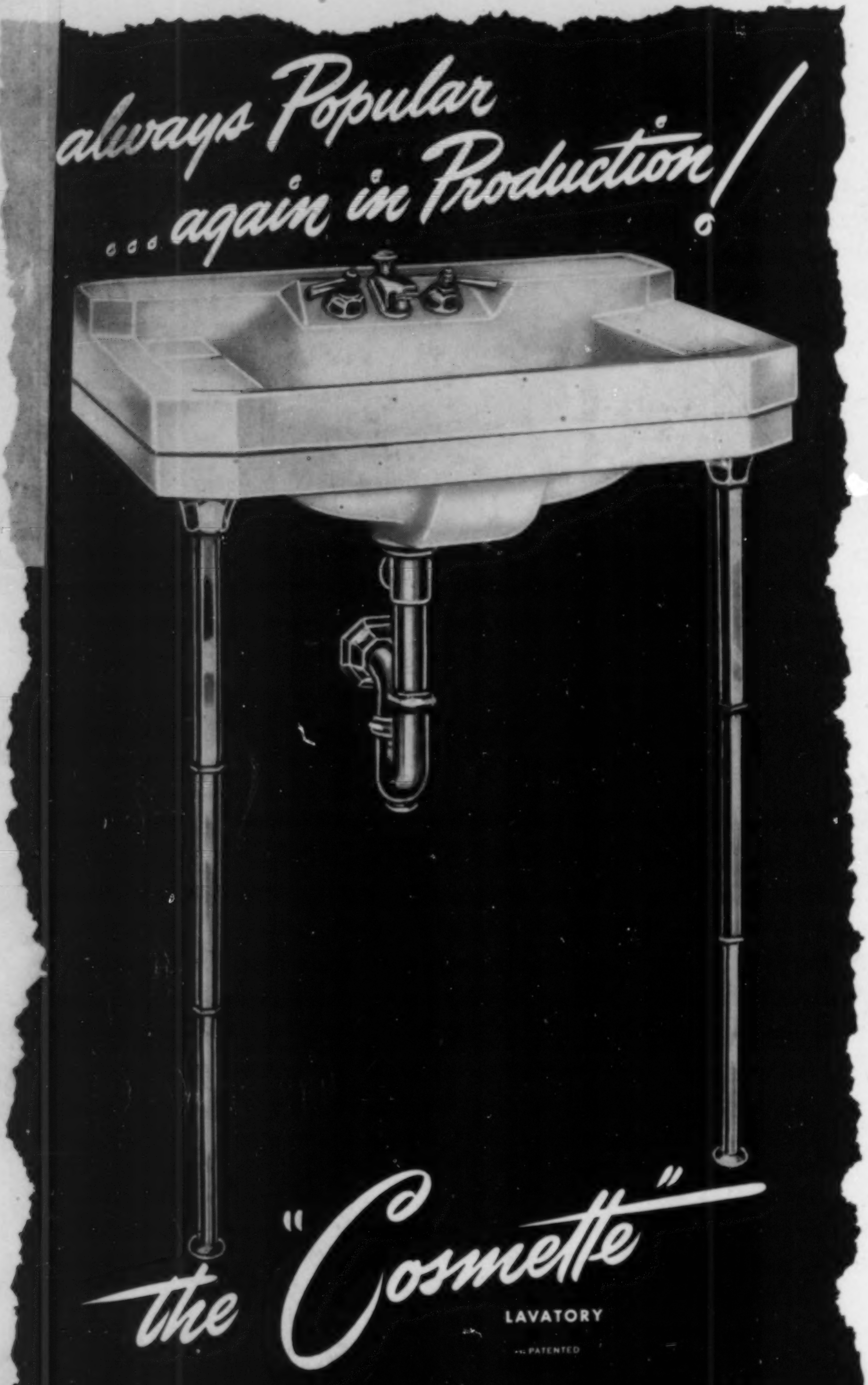

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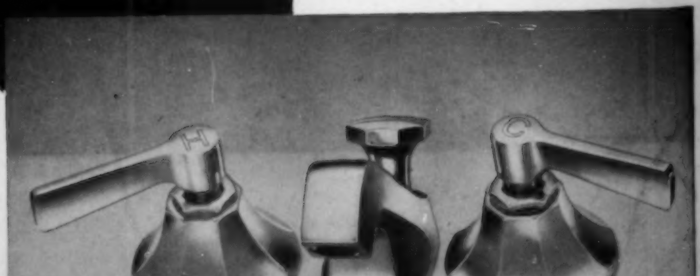

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